

# *Management of the California State Water Project*



State of California  
The Resources Agency  
Department of Water Resources

*Pete Wilson*  
Governor

*Douglas P. Wheeler*  
Secretary for Resources

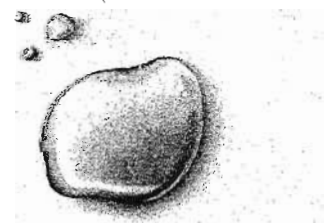
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California State Water Project*





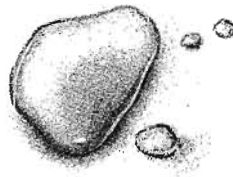
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# Contents

	Page
Foreword .....	vii
Acknowledgments .....	viii
<b>Introduction</b> .....	xi
<b>Part I. Introduction to the State Water Project</b> .....	1
1. Brief History of the State Water Project .....	3
2. Year in Review .....	11
<b>Part II. Meeting Today's Water Needs</b> .....	23
3. Collecting and Storing Water .....	25
4. Negotiating Contracts and Agreements .....	31
5. Delivering Water .....	39
6. Designing and Constructing Facilities .....	49
7. Ensuring Safety of Facilities .....	61
8. Generating, Buying, and Selling Power .....	67
<b>Part III. Ensuring Environmental Quality</b> .....	75
9. Reviewing Environmental Regulations .....	77
10. Preserving Delta Resources .....	81
11. Managing Delta Resources .....	85
12. Monitoring Water Quality .....	93
13. Protecting Fish, Plants, and Wildlife .....	103
<b>Part IV. Meeting Future Water Needs</b> .....	107
14. Forecasting Water Delivery Capabilities .....	109
15. Increasing Storage and Delivery Facilities .....	113
16. Augmenting the Water Supply .....	121
17. Assisting Local Water Supply Projects .....	127
18. Securing Power Resources .....	131
19. Forecasting Power Requirements, Resources, Costs, and Sales .....	141
<b>Part V. Financing the State Water Project</b> .....	153
20. Analyzing Capital Requirements and Funding of the State Water Project .....	155
21. Forecasting Revenues, Expenses, and Future Costs of Water Service .....	167
<b>Appendix A. June 30, 1991, Financial Report (bound separately)</b>	
<b>Appendix B. Data and Computations Used in Determining 1992 Water Charges</b> .....	183



## List of Tables

<i>Table</i>	<i>Page</i>
1. Physical Characteristics of Reservoirs and Dams .....	6
2. Average Amount of Energy Produced at Power Plants, by Type of Facility .....	6
3. Average Amount of Energy Required at Pumping Plants .....	7
4. Total Miles of Aqueducts .....	7
5. Names of Contracting Agencies, Amounts of Maximum Annual Entitlements, and Total Amounts of Deliveries and Payments Through 1990 .....	8
6. Total Number of Visitors' Days Accumulated in 1990, by Location .....	18
7. Total Number of Recreation Days Accumulated in 1990, by Division and Facility .....	18
8. Total Number of Fish Planted in 1990, by Location .....	19
9. Total Amounts of Water Delivered, Recreation Days Supported, and Energy Generated, 1962 Through 1990 .....	20
10. Amendments to Water Supply Contracts, June 30, 1991, by Service Area .....	37
11. Total Amounts of Water Delivered and Credits Granted to Long-Term Contractors in 1990, by Service Area .....	44
12. Total Amounts of Water Delivered in 1990, by Month .....	45
13. Total Amounts of Annual Entitlements and Water Conveyed, by Type, 1962 Through 1990 .....	48
14. Design Activities, July 1990 Through June 1991, by Division .....	57
15. Construction Activities, July 1990 Through June 1991 .....	58
16. Repairs and Modifications to Facilities in 1990, by Month .....	65
17. Amounts of Energy Used in 1990 and Sources of Energy, by Month .....	70
18. Energy Used in 1990 for Pumping at Joint-Use Facilities, by Month .....	71
19. Amounts of Power and Transmission Services Purchased in 1990 and Costs of Purchases .....	72
20. Total Amounts of Energy Sold in 1990 and Revenue from Sales .....	73
21. Six-Year Comparison of Total Yearly Amounts of Entitlement Water Requested with Total Amounts Possible to Request, 1990 Through 1995 .....	111
22. Total Amount of Water Purchased from Drought Water Bank, June 30, 1991, by Agency .....	125
23. Drought Water Bank Balances, June 30, 1991 .....	125
24. Power Contracts, by Title and Date Signed .....	138
25. Total Amounts of Energy Requirements for Years 1991, 1995, 2000, and 2005 .....	146
26. Estimates of Total Amounts of On-Peak and Off-Peak Energy Produced in Year 2000, by Type of Resource .....	148
27. Total Amounts of On-Peak and Off-Peak Electrical Capacity Requirements Projected for Years 1992 and 2000 .....	149
28. Estimated Amounts of Energy Resources and Unit Costs for Years 1991, 1995, 2000, and 2005 .....	151
29. State Water Project Capital Requirements and Financing, June 30, 1991 .....	163



30. Capital Expenditures Through 1990 .....	164
31. Application of Revenue Bond Proceeds .....	165
32. State Water Project Revenues and Expenses, June 30, 1991 .....	175
33. Effect of Revenue Bond Proceeds on Project Interest Rate .....	176
34. Actual Bond Sales and Project Interest Rates, by Date of Sale .....	177
35. Operations, Maintenance, Power, and Replacement Costs, by Facility, Composition, and Purpose .....	178
36. Annual Debt Service on Bonds Sold Through June 30, 1991 .....	179
37. Estimated Future Unit Water Charges .....	182

### List of Figures

<i>Figure</i>	<i>Page</i>
1. Names and locations of State Water Project facilities .....	4
2. Names and locations of and first year of service to long-term contracting agencies .....	9
3. Amount of water diverted through the Sacramento-San Joaquin Delta each month during 1990 .....	13
4. Amount of water conveyed past Kettleman City each month during 1990 .....	13
5. Amount of water pumped each month at the A. D. Edmonston Pumping Plant during 1990 .....	13
6. Locations of recreational facilities .....	17
7. Overview of water operations, 1990 .....	21
8. Statewide precipitation by hydrological area, 1989-90 water year .....	26
9. Monthly amounts of unimpaired runoff into Lake Oroville from Feather River, 1988 through 1990 water years .....	27
10. Monthly amounts of unimpaired runoff into Shasta Lake, 1988 through 1990 water years .....	27
11. Cumulative amount of unimpaired runoff into Lake Oroville from Feather River, 1990 water year .....	28
12. Cumulative amount of unimpaired runoff into Shasta Lake, 1990 water year .....	28
13. End-of-month storage levels in Lake Oroville, 1989 and 1990 calendar years .....	29
14. End-of-month storage levels in San Luis Reservoir, 1989 and 1990 calendar years .....	29
15. Names and locations of construction divisions .....	50
16. Boundaries of North, West, and South Delta water management programs .....	91
17. Water quality monitoring sites in Sacramento-San Joaquin Delta .....	102
18. Names and locations of power facilities .....	132
19. Estimated energy requirements and resources for years 1991 through 2004 .....	147
20. Estimates of sources to meet on-peak and off-peak energy requirements for years 1992 and 2000 .....	150





# Foreword

CALIFORNIA'S WATER MANAGEMENT PROGRAMS ARE becoming both more diverse and more interrelated. Water interests throughout the state are working together to help remedy serious water shortages, particularly those brought on by the drought.

We in the Department of Water Resources have been exploring a wide range of water management programs, including water transfers, conjunctive use of surface water and groundwater, and water banking. And we have been implementing those programs that will help the State Water Project deliver affordable water to the nearly 20 million Californians who depend on it for water supply.

In fiscal year 1990-91, for example, the Department established a groundwater demonstration program with Kern County Water Agency. The Department plans to develop the Kern Water Bank, a conjunctive-use groundwater storage program that, when completed, will provide the State Water Project with about two million acre-feet of groundwater storage. In addition, the Department administered Governor Pete Wilson's Drought Water Bank, a program designed to make water available to agencies for meeting critical water needs. At the end of June 1991, about 390,000 acre-feet of water had been purchased from the bank by agencies throughout California. Some water was also purchased for storage by the State Water Project.

As we experience a fifth year of drought, cooperation rather than competition among water users will become more important as we in the Department work to meet the needs of Californians who depend on water delivered by the State Water Project.



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# *Introduction*

**D**URING THE 1950s AND 1960s, when the State Water Project (SWP) was planned, built, and made its first water deliveries, California was seen as a state blessed with abundant natural resources and virtually unlimited opportunities to use them. Today, not only are natural resources seen as finite; they are commonly viewed as part of a larger ecosystem that deserves to be protected and managed.

The operation of the State Water Project has been affected by the changes in the way natural resources are now viewed. For example, to meet the needs of its water contractors, SWP has shifted its focus from obtaining water from conventional means—building dams and reservoirs—to investigating and implementing feasible programs to conserve, bank, transfer, and exchange water. And, to ensure environmental quality in the areas in which it operates, SWP has established extensive water management programs as well as comprehensive programs to ensure water quality and protect fish, plants, and wildlife.

This edition of Bulletin 132 is designed to provide information about those new activities as well as about other programs and activities conducted by the Department for the State Water Project from January 1, 1990, to June 30, 1991.<sup>1</sup> The material is arranged in 21 chapters, which are organized into five parts: “Introduction to the State Water Project”; “Meeting Today’s Water Needs”; “Ensuring Environmental Quality”; “Meeting Future Water Needs”; and “Financing the State Water Project.”

As usual, to facilitate understanding of the material, various tables and figures have been included. For ease of reading, they have been integrated in the text when possible; those that could not be integrated in the text have been grouped at the end of the appropriate chapters. The bulletin contains one appendix, “Data and Computations Used in Determining 1992 Water Charges.”

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<sup>1</sup>Information concerning water deliveries and related power generation and recreational activities, including information contained in chapters 2, 5, 8, 14, 18, and 19, is based on the 1990 calendar year. Information contained in the remaining chapters is based on the 1990-91 fiscal year; that is, the period from July 1, 1990, to June 30, 1991.





## Part I.

# Introduction to the State Water Project

### 1. Brief History of the State Water Project 3

- Searching for Solutions 3
- Securing Water Rights 4
- Beginning Construction 5
- Operating the State Water Project Today 5

### 2. Year in Review 11

- The Drought 11
- Water Operations 12
  - Diversions from the Delta 12
  - Water Conveyed South of San Luis Reservoir 12
- Emergency Repairs 13
- Legislation and Litigation 13
  - Legislation 14
    - Contracts Administration 14
    - Model Water-Efficient Landscape Ordinance 14
    - Projects Affecting the State Water Project 14
    - San Joaquin River Management Program 14
    - Urban Water Management Planning Act 14
  - Litigation 14
    - Bowles, et al. v. Lost Hills Water District, et al.* 15
    - Kern Property Corporation v. State of California* 15

*Nevada Power Company and the Department of Water Resources v. Fluor Power Services, Inc., et al.* 15

*South Delta Water Agency v. United States, et al.* 15

*United States v. Nevada Power Company* 16

*Department of Water Resources v. Lake County* 16

### Recreational Facilities 16

Use of Facilities 17

Improvements 18

Lake Oroville 18

Pyramid Lake 18

Castaic Lake 18

Lake Perris 18

### Recreational Activities 19

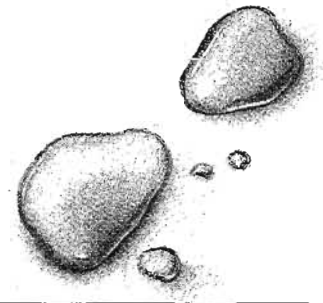
Fish Plantings 19

Pheasant Hunt 19

Wilderness Explorations 19



# 1. *Brief History of the State Water Project*



**T**HE CALIFORNIA STATE WATER PROJECT (SWP) is the largest state-built, multipurpose water project in the country. Consisting of 22 dams and reservoirs, nine power plants, 17 pumping plants, and 648 miles of aqueducts, SWP was designed to store surplus water during wet periods and distribute it, when needed, to areas in northern and southern California, the San Francisco Bay Area, and the San Joaquin Valley (see Figure 1, “Names and locations of State Water Project facilities,” on the next page).

Planned to be built over a 30-year period, the project, which is part of the Department of Water Resources, was also designed to control floods, generate power, and provide recreational facilities as well as enhance habitats for fish and wildlife. Today, approximately 20 million Californians depend, solely or in part, on SWP for water.

The State Water Project’s largest storage facility is the Oroville Dam and Reservoir (Lake Oroville). Oroville Dam is approximately 770 feet high and impounds a reservoir with a storage capacity of 3,537,580 acre-feet. Completed in 1968, the dam is the tallest and one of the largest earthen dams in the United States.

Water flows through the project, so to speak, from the Upper Feather River to Lake Oroville, through Oroville Dam into the Feather River and then on to the Sacramento River. From the Sacramento River water flows to the Delta, where it is pumped for delivery through the North Bay and

South Bay aqueducts and through the California Aqueduct. Napa and Solano counties receive water through the North Bay Aqueduct; Alameda County and Santa Clara County, through the South Bay Aqueduct; and the western San Joaquin Valley and southern California, through the California Aqueduct.

Through the 444-mile-long California Aqueduct, water is delivered to seven water districts or agencies in the San Joaquin Valley and to 13 in southern California. In 1990, 3,900,045 acre-feet of water was delivered by SWP to 21 contractors and 22 other agencies.

## *Searching for Solutions*

In the early 1800s water development projects in California were conducted by individuals or private companies who focused on finding solutions to local problems.

In the early 1900s local water districts were instrumental in developing water projects. For example, in 1905 the city of Los Angeles issued bonds for the construction of the Owens Valley Project. And in 1923 the city of San Francisco constructed Hetch Hetchy Project. Through the actions of local districts, more than 950 dams and reservoirs were constructed; and land that once was considered unusable was transformed into productive assets through irrigation.

THE CALIFORNIA STATE WATER PROJECT IS THE LARGEST STATE-BUILT, MULTIPURPOSE WATER PROJECT IN THE COUNTRY.





**Fig. 1. Names and locations of State Water Project facilities**

As California's population increased, however, finding statewide solutions became a priority. Planning for a statewide water project began in 1920 when the California Legislature initiated a series of comprehensive studies of California's water needs. As a result, plans for constructing the Central Valley Project (CVP) and initial elements of the State Water Project were published in 1931.

Ten years later, in 1941, the CVP, built by the U.S. Bureau of Reclamation, began operating. In the nine years to follow, California, responding to unprecedented growth in population, finalized plans for constructing the State Water Project.

## *Securing Water Rights*

The challenges of planning and designing a comprehensive water development project for California were matched by the complexities of acquiring the water rights necessary to store and divert water.

Acquiring those rights began in 1927 when the legislature enacted a law to authorize the Department of Finance to appropriate water for the state's water development plan. Rights were appropriated according to provisions of the Water Commission

Act of 1913, which involved obtaining them according to a permit process.

Initially, water right permits necessary for operating SWP were issued by the State Water Rights Board (now the State Water Resources Control Board [SWRCB]) to the Department of Finance. However, since then, those permits have been transferred to the Department of Water Resources and the U.S. Bureau of Reclamation, which operates the federal Central Valley Project.

Since then, SWRCB has issued water right permits to the Department for operating SWP. However, because the board has reserved jurisdiction to consider the effects of issuing permits, it has periodically reviewed and modified terms and conditions of the permits.

For example, in 1967, 1971, 1976, and 1991, SWRCB reviewed the Department's water right permits to ensure protection of beneficial uses of the state's water resources and establish water quality standards for the Delta. As a condition for renewing those permits, SWRCB set terms and conditions for SWP's operations involving water quality and releases, diversions, pumping, and flows.

## ***Beginning Construction***

Construction of SWP began in early 1957 in the Oroville area. Funding for construction was appropriated by the legislature each year until 1960 when the voters passed the State Water Resources Development Act or the Burns-Porter Act. That act authorized the issuance of \$1.75 billion of general obligation bonds to fund construction.

The first deliveries of water to contractors began in 1962. In 1963 work began on the California Aqueduct; and by 1968 SWP was able to deliver water in the San Joaquin Valley. By 1973 the initial facilities were completed; and SWP could deliver water to Lake Perris, the project's southernmost point.

## ***Operating the State Water Project Today***

Today, the State Water Project delivers water to 28 of the 30 agencies or districts under contract and, as constructed, includes most of the facilities recommended and authorized for construction in the 1950s.<sup>1</sup> Some facilities, though, have been modified and deferred because of economic or financial reasons or to account for changes in land use and population and the introduction of various environmental laws and regulations.

Currently, SWP operates 22 reservoirs and dams, 10 power plants, 17 pumping plants, and three aqueducts. Tables 1 through 4 include information about those facilities.<sup>2</sup>

A list of SWP's reservoirs and dams may be found in Table 1, along with information about physical characteristics of each facility. The data concerning reservoirs are based on design elevations, generally spillway crest levels. In most cases, normal maximum operational levels are set one or two feet lower.

A list of SWP's power plants may be found in Table 2, as well as information pertaining to the amount of energy produced at each facility at SWP's full development.

Table 3 includes a list of SWP's pumping plants as well as information about the amount of energy required to pump water at SWP's full development.<sup>3</sup> Data for Hyatt, Thermalito, and Gianelli apply to pumped storage capability. At Hyatt and

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<sup>1</sup>See Table 5 at the end of this chapter for names of contracting agencies and total amounts of water delivered and total payments through December 31, 1990. Locations of contracting agencies may be found in Figure 2, "Names and locations of and first year of service to long-term contracting agencies," which is also located at the end of this chapter. Delivery facilities are not available for two contractors, San Luis Obispo County Flood Control and Water Conservation District and Santa Barbara County Flood Control and Water Conservation District.

<sup>2</sup>Names of facilities included in this publication are presented as they were adopted by the California Water Commission as part of the State Water Resources Development System.

<sup>3</sup>Names of facilities included in tables 1, 2, and 3 are listed according to geographical location, with the facility at the northernmost point listed first. See Figure 1 on page 4 for locations of the facilities.

TABLE 1  
Physical Characteristics of Reservoirs and Dams

Facility	Reservoirs			Dams			
	Capacity (Acre-feet)	Surface Area (Acres)	Shoreline (Miles)	Crest Elevation (Feet)	Structural Height (Feet)	Crest Length (Feet)	Embankment Volume (Cubic yards)
Frenchman Lake	55,500	1,580	21	5,607	139	720	537,000
Antelope Lake	22,600	930	15	5,025	120	1,320	380,000
Lake Davis	84,400	4,030	32	5,785	132	800	253,000
Lake Oroville	3,520,000	15,800	167	922	770	6,920	80,000,000
Thermalito Diversion Pool	13,300	320	10	233	143	1,300	154,000
Fish Barrier Pool	600	50	1	181	91	600	10,000
Thermalito Forebay	11,700	630	10	231	91	15,900	1,840,000
Thermalito Afterbay	57,000	4,300	26	142	39	42,000	5,020,000
Clifton Court Forebay	28,700	2,110	8	14	30	36,500	2,440,000
Bethany Reservoir	4,800	180	6	250	121	3,940	1,400,000
Lake Del Valle	77,100	1,050	16	773	235	880	4,150,000
San Luis Reservoir	2,028,000	12,700	65	554	385	18,600	77,645,000
SWP storage	1,062,000						
O'Neill Forebay	56,400	2,700	12	233	88	14,350	3,000,000
SWP storage	29,500						
Quall Lake	8,800	360	3	3,320	45	6,600	
Pyramid Lake	171,000	1,300	21	2,606	400	1,090	6,860,000
Elderberry Forebay	28,200	460	7	1,550	200	1,990	6,000,000
Castaic Lake	324,000	2,240	29	1,535	425	4,900	46,000,000
Castaic Lagoon	5,600	200	3	1,150	25		
Los Banos Reservoir	34,600	620	12	384	167	1,370	2,100,000
Little Panoche Reservoir	5,600	190	6	676	152	1,440	1,210,000
Silverwood Lake	75,000	980	13	3,378	249	2,230	7,600,000
Lake Perris	131,000	2,320	10	1,600	128	11,600	20,000,000

TABLE 2  
Average Amount of Energy Produced at  
Power Plants, by Type of Facility

Type and Facility	Number of Units	Normal Static Head (ft)	Total Design Flow (cfs)	Total Generator Rating (kw)	Average Annual Energy Demand (kWh)
<b>Hydro</b>					
Thermalito Diversion Dam	1	63-77	6145	2,970	18,000,000
Thermalito	4	85-102	16,900	110,160	240,000,000
Hyatt	6	410-678	16,950	643,140	1,388,000,000
Gianelli Pumping- Generating SWP share	8	99-327	17,600	424,000	195,000,000
Alamo	1	115-141	1,740	17,000	110,000,000
Warme	2	719-739	1,594	78,500	358,000,000
Castaic	7	830-1,098	17,600	1,250,000	569,000,000
SWP share					100,000,000
Mojave Siphon	3	110	2,886	16,800	1,723,000,000
Devil Canyon	4	1,411	2,800	272,000	
<b>Thermal</b>					
Reld Gardner, Unit 4 SWP share	1			250,000	1280,000,000
<b>Total</b>					<b>6,531,000,000</b>

Thermalito, pumped storage capability is used only under economically favorable conditions.

Buena Vista, Wheeler Ridge, Chrisman, Edmonston, Pearblossom, Devil's Den, Bluestone, and Polonio Pass pumping plants include a spare unit. In addition, Devil's Den, Bluestone, and Polonio Pass are future facilities; data are tentative.

Table 4 includes a list of SWP's three aqueducts and related branches as well as information about the length of each in miles. In addition, a small aqueduct, Grizzly Valley Pipeline, serves the city of Portola in the Upper Feather River Area.

In the 1990s the Department is concentrating SWP's development activities in four areas:

1. Installing additional pumping units at the Harvey O. Banks Delta Pumping Plant
2. Increasing the capacity of Delta channels (See Chapter 11, "Managing Delta Resources.")
3. Developing facilities to bring water to San Luis Obispo and Santa Barbara counties (See Chapter 15, "Increasing Storage and Delivery Facilities.")
4. Augmenting SWP's water storage capacity (Los Banos Grandes Reservoir, for example; see Chapter 15.)

The Department also is investigating or studying other programs to increase the dependable supply of water available for SWP's use. Those programs, many of which involve cooperating with other water agencies to manage water resources, include:

*Groundwater Storage Programs.* Water is placed in groundwater basins for use at a later date. Using available groundwater storage space has many advantages over constructing new surface facilities: less evaporation of water occurs; capital costs are lower; and generally, groundwater storage projects are more environmentally acceptable than surface storage projects.

Currently, the Department is working with the Kern County Water Agency to develop the Kern Water Bank (see Chapter 15, "Increasing Storage and Delivery Facilities," for additional information).

**Water Exchanges.** Through water exchange programs, a type of groundwater storage program, the Department has the capability for exchanging water with various water agencies through connecting existing aqueduct systems. For example, a SWP contractor may deliver part of its water to another agency served by SWP. The SWP agency would then use the water for direct spreading or as a surface supply to land that would otherwise have been served by pumped groundwater.

In exchange, in years when the SWP contractor required additional water, the agency would make water available from its SWP entitlement and pump additional groundwater.

**Water Transfers.** In 1982 the first legislation designed specifically for allowing water transfers or marketing to take place was passed in California (Assembly Bill 3491 [Katz]).

According to the legislation, the Department and SWRCB were directed to encourage voluntary transfers of water and water rights. Although negotiating water transfers is complicated by the legal, economic, and environmental effects that must be considered, innovative programs for water transfers and water sharing have been proposed.

This year, the Department managed and administered Governor Pete Wilson's Drought Water Bank, a water marketing program administered by David N. Kennedy, Director of the Department of Water Resources (see Chapter 16, "Augmenting the Water Supply").

TABLE 3  
Average Amount of Energy Required at Pumping Plants

Facility	Number of Units	Normal Static Head (ft)	Total Design Flow (cfs)	Total Motor Rating (hp)	Average Annual Energy Demand (kWh)
Thermalito (Pumped storage)	3	85-102	8,120	120,000	
Hyatt (Pumped storage)	3	500-660	5,610	519,000	
Barker Slough	9	95-120	228	4,800	15,000,000
Cordelia	11	104-439	146	4,940	23,000,000
Banks	11	236-252	10,300	333,000	1,230,000,000
South Bay	9	566	330	27,750	151,000,000
Del Valle	4	0-38	120	1,000	2,000,000
Gianelli (Pumped storage)	8	99-327	11,000	504,000	
SWP share					255,000,000
Dos Amigos	5	107-125	13,200	240,000	545,000,000
SWP share					16,000,000
Los Perillas	6	55	450	4,050	
Badger Hill	6	151	450	11,750	42,000,000
Devil's Den (Future facility)	4	378	80	4,760	47,000,000
Bluestone (Future facility)	4	534	80	6,680	47,000,000
Polonio Pass (Future facility)	4	543	80	6,680	47,000,000
Buena Vista	10	205	5,049	144,500	653,000,000
Wheeler Ridge	9	233	4,598	150,000	756,000,000
Chrisman	9	518	4,410	330,000	1,608,000,000
Edmonston	14	1,926	4,095	1,120,000	5,580,000,000
Oso	8	231	3,129	93,800	170,000,000
Pearlblossom	9	542	2,130	180,000	1,247,000,000
<b>Total</b>					<b>12,435,000,000</b>

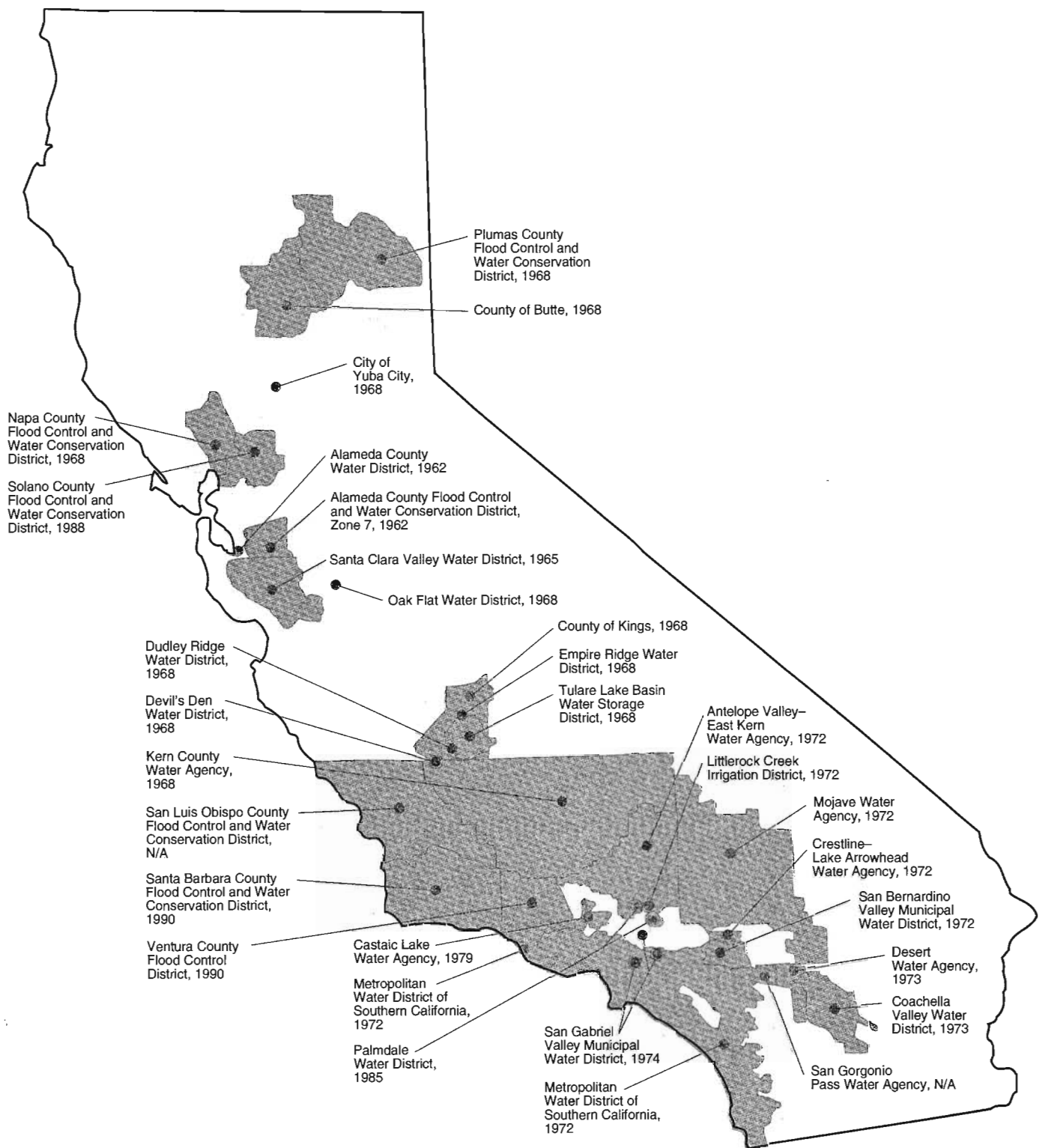
TABLE 4  
Total Miles of Aqueducts

Facility	Channel and Reservoir	Canal	Pipeline	Tunnel	Total
North Bay Aqueduct	0.0	0.0	27.4	0.0	27.4
South Bay Aqueduct	0.0	8.4	32.9	1.6	42.9
<b>Subtotal</b>	<b>0.0</b>	<b>8.4</b>	<b>60.1</b>	<b>1.6</b>	<b>70.3</b>
California Aqueduct, Main Line					
Delta to O'Neill Forebay	1.4	67.0	0.0	0.0	68.4
O'Neill Forebay to Kettleman City	2.2	103.5	0.0	0.0	105.7
Kettleman City to Edmonston Pumping Plant	0.0	120.9	0.0	0.0	120.9
Edmonston Pumping Plant to Tehachapi Afterbay	0.0	0.2	2.5	7.9	10.6
Tehachapi Afterbay to Lake Perris	2.9	93.4	38.3	3.8	138.4
<b>Subtotal</b>	<b>6.5</b>	<b>385.0</b>	<b>40.8</b>	<b>11.7</b>	<b>444.0</b>
California Aqueduct, Branches					
West Branch	9.2	9.1	6.4	7.2	31.9
Coastal Branch (Planned)	0.0	14.8	87.6	0.0	101.8
<b>Subtotal</b>	<b>9.2</b>	<b>23.9</b>	<b>93.4</b>	<b>7.2</b>	<b>133.7</b>
<b>Total Miles</b>	<b>15.7</b>	<b>417.3</b>	<b>194.5</b>	<b>20.5</b>	<b>648.0</b>

TABLE 5  
Names of Contracting Agencies, Amounts of Maximum Annual Entitlements, and  
Total Amounts of Deliveries and Payments Through 1990

<i>Contracting Agency</i>	<i>Maximum Annual Entitlement (Acre-feet)</i>	<i>Total Deliveries (a) (Acre-feet)</i>	<i>Total Payments (Dollars)</i>
<b>Upper Feather River Area</b>			
City of Yuba City	9,600	1,786	\$286,000
County of Butte	27,500	6,394	445,000
Plumas County Flood Control and Water Conservation District	2,700	7,732	617,000
<i>Subtotal</i>	39,800	15,912	1,348,000
<b>North Bay Area</b>			
Napa County Flood Control and Water Conservation District	25,000	125,018	16,274,000
Solano County Water Agency	42,000	49,919	19,329,000
<i>Subtotal</i>	67,000	174,937	35,603,000
<b>South Bay Area</b>			
Alameda County Flood Control and Water Conservation District, Zone 7	46,000	388,783	29,911,000
Alameda County Water District	42,000	482,401	34,384,000
Santa Clara Valley Water District	100,000	2,249,779	119,449,000
<i>Subtotal</i>	188,000	3,120,963	183,744,000
<b>San Joaquin Valley Area</b>			
County of Kings	4,000	51,900	1,517,000
Devil's Den Water District	12,700	339,221	11,026,000
Dudley Ridge Water District	57,700	1,222,498	27,121,000
Empire West Side Irrigation District	3,000	79,094	1,551,000
Kern County Water Agency	1,153,400	17,522,457	577,362,000
Oak Flat Water District	5,700	128,774	2,123,000
Tulare Lake Basin Water Storage District	118,500	2,609,920	49,902,000
<i>Subtotal</i>	1,355,000	21,953,864	670,602,000
<b>Central Coastal Area</b>			
San Luis Obispo County Flood Control and Water Conservation District	25,000	0	8,585,000
Santa Barbara County Flood Control and Water Conservation District	45,486	0	16,527,000
<i>Subtotal</i>	70,486	0	25,112,000
<b>Southern California Area</b>			
Antelope Valley-East Kern Water Agency	138,400	672,932	123,463,000
Castaic Lake Water Agency	41,500	142,695	47,138,000
Coachella Valley Water District	23,100	233,832	45,214,000
Crestline-Lake Arrowhead Water Agency	5,800	23,666	8,328,000
Desert Water Agency	38,100	373,400	69,782,000
Little Rock Creek Irrigation District	2,300	9,224	2,281,000
Metropolitan Water District of Southern California	2,011,500	11,342,587	2,735,391,000
Mojave Water Agency	50,800	57,815	49,086,000
Palmdale Water District	17,300	25,420	15,625,000
San Bernardino Valley Municipal Water District	102,600	234,891	148,314,000
San Gabriel Valley Municipal Water District	28,800	118,431	42,598,000
San Geronio Pass Water Agency	17,300	0	20,745,000
Ventura County Flood Control District	20,000	4,836	16,431,000
<i>Subtotal</i>	2,497,500	13,239,729	3,324,396,000
<b>Total</b>	<b>4,217,786</b>	<b>38,505,405</b>	<b>\$4,240,805,000</b>

a) Includes amounts of all water delivered to long-term contractors, including deferred and entitlement water; surplus and unscheduled water; water used for emergency relief and exchange; and non-SWP water delivered through SWP facilities.

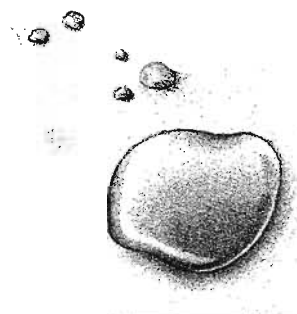


**Fig. 2. Names and locations of and first year of service to long-term contracting agencies**





## 2. Year in Review



**T**O DELIVER WATER ACCORDING TO ITS contractual obligations, the State Water Project (SWP) is involved in complex operational activities, such as collecting and storing water; monitoring water quality; generating, buying, and selling energy; and ensuring environmental quality. Those activities became even more complex as the Department of Water Resources investigated and implemented programs to lessen the impact of the drought during 1990 and 1991.<sup>1</sup>

This chapter includes information about those programs and related activities as well as information about water operations; emergency repairs to facilities; legislation; litigation; and recreational activities.<sup>2</sup>

### *The Drought*

In 1990 California experienced its fourth consecutive year of drought—a drought that critically affected SWP’s operations. In fact, January 1990 was preceded by the driest December on record in the Feather River drainage area, the primary source of SWP’s water supply. In March 1990 the annual

maximum storage in Lake Oroville was at the lowest it has been since 1977—2,101,924 acre-feet.

Because of diminished water supplies, the Department was forced to make drastic cuts in deliveries for the first time since 1977. Out of original requests for 1,243,786 acre-feet of entitlement water for agricultural use, SWP delivered only 612,621 acre-feet.

Diminished water supplies also affected SWP’s operations in the Delta, where it carefully monitors and regulates, as appropriate, flow, salinity levels, and export quantities of water to meet standards included in the State Water Resources Control Board’s *Water Right Decision 1485: Sacramento-San Joaquin Delta and Suisun Marsh* (1978). See Chapter 3, “Collecting and Storing Water,” for additional information about Decision 1485.

In addition, because of the low storage in Lake Oroville, meeting the water temperature requirements for fish below the dam became a top priority. The movable control shutters of the intake structures were modified to reach cooler water levels, and the rate of generation at the Hyatt Powerplant was cut back. See Chapter 12, “Monitoring Water Quality,” for additional information about those activities.

To help lessen the impact of the drought and distribute water to areas of greatest need, SWP, through its system of aqueducts and canals, participated in the transfers and exchanges of water throughout the state.

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ACRE-FEET.

<sup>1</sup>Except for specific information pertaining to water deliveries, related power generation, and recreational activities, all information contained in this bulletin is organized according to the fiscal year beginning July 1, 1990, and ending June 30, 1991. Information about water deliveries, related power, and recreational activities is organized according to calendar year 1990.

<sup>2</sup>See Table 9, “Total Amounts of Water Delivered, Recreation Days Supported, and Energy Generated, 1962 Through 1990,” at the end of this chapter.

For example, to reduce the amount of water required to be released from Lake Oroville, the Department purchased a total of 118,909 acre-feet of water from Yuba County Water Agency. This water was released from storage in the agency's Bullard's Bar Dam on the Yuba River. Those releases allowed a like amount of water to be held in storage in Lake Oroville for use later by SWP.

In addition, SWP transported water purchased by the (1) city of Napa from the Yuba County Water Agency; (2) Westlands Water District from Oroville-Wyandotte Irrigation District; and (3) city of San Francisco from the Placer County Water Agency and the Modesto Irrigation District. See Chapter 5, "Delivering Water," for additional information about purchases and transfers.

As the drought continued into 1991, the Department, under the direction of Governor Pete Wilson, set up the Drought Water Bank. Established in February 1991, the water bank was open to agencies, associations, and others with a critical need for water.

The water bank, established at the recommendation of Governor Wilson's Drought Action Team, was designed to meet critical water needs for fish, wildlife, cities, and farms and to provide carry-over storage in reservoirs in case the drought continued.

The water bank was also designed to provide water necessary for public health and safety and to protect permanent crops such as trees and vines.

David N. Kennedy, Director of the Department of Water Resources, was appointed by Governor Wilson as chairperson of the Drought Action Team and administrator of the Drought Water Bank.

The water for the bank was obtained from three sources:

1. Surplus water in surface reservoirs
2. Additional pumping of groundwater
3. Fallowed agricultural lands

According to terms of contracts signed with purchasers, water not sold by the end of 1991 will be purchased by SWP. See Chapter 16, "Augmenting the Water Supply," for additional information about the Drought Water Bank.

## ***Water Operations***

In calendar year 1990, SWP facilities were used to convey 3,900,066 acre-feet of water, including 2,582,151 acre-feet of entitlement and entitlement-related water to SWP contractors.

In addition, 991,840 acre-feet of Central Valley Project (CVP) water was conveyed by the U.S. Bureau of Reclamation through San Luis joint-use facilities to CVP's service area. See Figure 7, "Overview of water operations, 1990," at the end of this chapter and Chapter 5, "Delivering Water."

### ***Diversions from the Delta***

Generally, water diverted from the Sacramento-San Joaquin Delta is delivered to SWP storage facilities and contractors through Banks Pumping Plant and Barker Slough Pumping Plant and to CVP storage facilities and contractors through the Tracy Pumping Plant and Contra Costa Canal Pumping Plant.

Figure 3 includes information about the amount of water diverted from the Delta each month.

### ***Water Conveyed South of San Luis Reservoir***

The amount of water conveyed to southern California each month for storage and delivery is measured by the amount of water pumped over the Tehachapi Mountains at the A. D. Edmonston Pumping Plant.

Generally, water conveyed to the San Joaquin Valley is represented by the difference between the amount of water conveyed past Kettleman City and the amount pumped over the Tehachapi Mountains.

Figure 4 includes information about the amount of water conveyed past Kettleman City. Figure 5 includes information about the amount of water pumped at A. D. Edmonston Pumping Plant.

## ***Emergency Repairs***

The State Water Project regularly monitors and schedules maintenance on its dams, reservoirs,

power plants, pumping plants, and aqueducts. Chapter 7, "Ensuring Safety of Facilities," contains information about those activities. However, SWP's commitment to delivering water according to its contractual obligations is put to the test when emergency repairs need to be made, particularly repairs to correct mechanical or structural problems that could bring SWP's operations to a halt. A leak in the California Aqueduct is just such a problem.

In early 1990 maintenance personnel observed a small leak in the California Aqueduct at Mile 56, a section with a conveyance capacity of 10,000 cubic feet of water per second (cfs). On January 4 they began to drill curtain holes and fill them with grout; the work was completed on January 18.

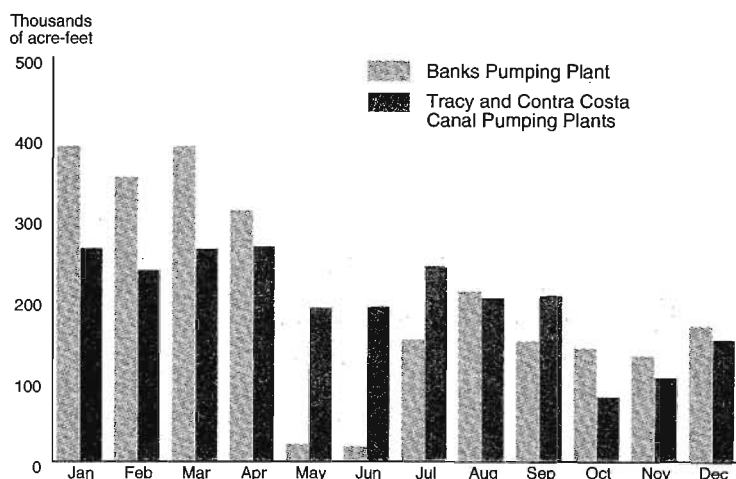
The grouting did not stop the leak, however, so on April 19 the aqueduct was taken out of service. Maintenance personnel worked around the clock to drain Pool 10 and remove its concrete lining; excavate and replace approximately 80,000 cubic yards of material under and along the sides of the aqueduct; and pour a new concrete lining. The repairs were completed and the aqueduct brought back into service on July 10.

To ensure uninterrupted deliveries to the lower San Joaquin Valley and southern California, SWP worked with the U.S. Bureau of Reclamation to ensure that water was available from the San Luis Reservoir.

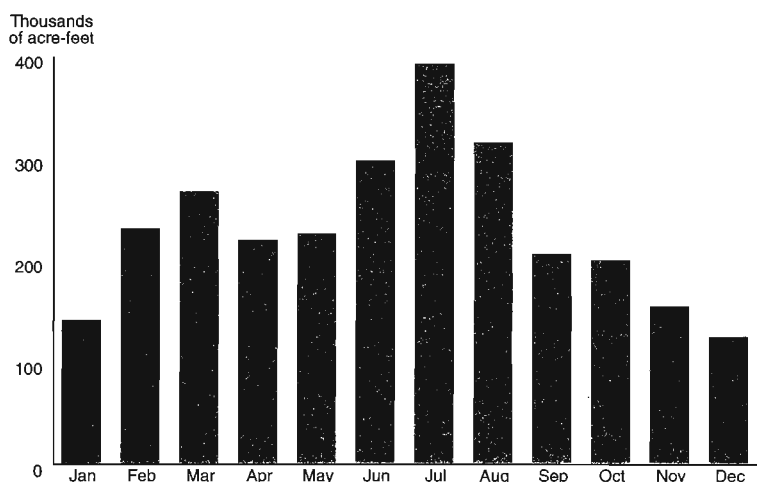
## Legislation and Litigation

Because of its many diverse activities involving water resources, the Department often is affected by laws enacted on the state and federal levels. In addition, the Department may instigate or be party to litigation proceedings.

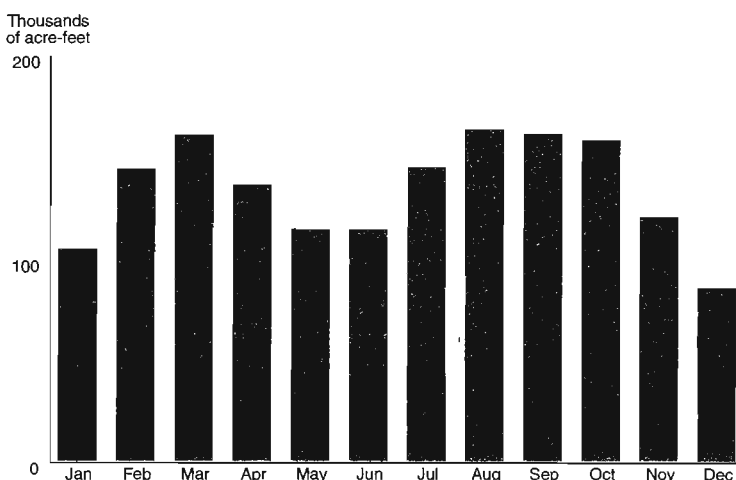
This chapter contains information about applicable legislation enacted between July 1, 1990, to June 30, 1991, and about litigation in which the Department was involved during that same period.



**Fig. 3. Amount of water diverted through the Sacramento-San Joaquin Delta each month during 1990**



**Fig. 4. Amount of water conveyed past Kettleman City each month during 1990**



**Fig. 5. Amount of water pumped each month at the A. D. Edmonston Pumping Plant during 1990**

## ***Legislation***

Federal legislation applicable to the State Water Project was not enacted in 1990. However, five state laws enacted in 1990 were applicable. Information on those laws, arranged alphabetically according to subject, follows.

### ***Contracts Administration***

Senate Bill 1703, Chapter 1044 of 1990, results in miscellaneous changes to improve the administration and performance of state contracts. In addition, an early completion incentive provision may be included in certain Department construction contracts.

### ***Model Water-Efficient Landscape Ordinance***

According to provisions of Assembly Bill 325, Chapter 1145 of 1990, the Department is required to appoint an advisory task force to work with it to develop a model water-efficient landscape ordinance that may be adopted by cities and counties.

The Department will release a draft ordinance in July 1991; hold public hearings on the ordinance in October 1991; and adopt a model ordinance in January 1992 to be submitted to cities and counties.

### ***Projects Affecting the State Water Project***

According to provisions of Senate Bill 2161, Chapter 243 of 1990, the Department is permitted to review and comment on proposed subdivision developments that may affect SWP, including any facilities proposed for construction by SWP.

### ***San Joaquin River Management Program***

Assembly Bill 3603, Chapter 1068 of 1990, results in the creation of the San Joaquin River Management Program Advisory Council and the San Joaquin River Management Program Team.

The team will develop proposed program elements and submit recommendations to the advisory council for review and approval. The council will develop a management program to identify actions

that may be taken to reach solutions to needs involving water supplies, water quality, flood protection, fisheries, wildlife habitat, and recreation.

The secretary of the Resources Agency is required to appoint a project manager to coordinate activities of the advisory council and team; and the Department and the Reclamation Board are required to participate on the advisory council. The advisory council is required to submit an annual report to the legislature until the bill expires on January 1, 1995.

### ***Urban Water Management Planning Act***

According to Assembly Bill 2661, Chapter 355 of 1990, the Urban Water Management Planning Act's sunset clause is deleted. The 1983 act requires every supplier who supplies (1) more than 3,000 acre-feet of water or (2) water to municipalities with more than 3,000 customers to prepare and adopt annually an urban water management plan and file the plan with the Department.

The Department must report annually to the legislature a summary of the status of the various plans.

## ***Litigation***

During July 1, 1990, to June 30, 1991, the Department was involved in six cases concerning operational aspects of the State Water Project. Information about those cases, arranged alphabetically, follows.

### ***Bowles, et al. v. Lost Hills Water District, et al.***

In this suit, filed October 4, 1988, in Kern County Superior Court, Bowles and several other landowners within the Mills Water District complained that lands have been damaged by a rising water table and alleged that the damage was caused by drainage from irrigating lands in Lost Hills Water District. Lost Hills received the water from Kern County Water Agency, which receives the water from the State Water Project.

Lost Hills has defended the Department according to an indemnity provision. The parties reached a settlement in June 1991, in which Bowles agreed to dismiss the case against the Department. The Department was not required to pay damages.

#### **Kern Property Corporation v. State of California**

This suit, filed on December 29, 1982, by Kern Property Corporation against the Department and eight other named defendants, involves rights to the use of Kern River water and the operation of the Kern River Intertie.

The Kern Property Corporation alleges that the Department violated the Watershed of Origin statute, *Water Code* Section 11460, by accepting water into the intertie before the needs of the corporation were met.

The intertie is operated according to contracts with federal and state governments and several local agencies and districts. At the time the intertie was built, some districts agreed to indemnify the state against litigation regarding operation. Settlement is being discussed. A related case, *River West, Inc. v. State of California*, was dismissed in 1988.

#### **Nevada Power Company and the Department of Water Resources v. Fluor Power Services, Inc., et al.**

In this suit, filed in fall 1986 in Nevada's Clark County District Court, the Department and Nevada Power Company sued the general contractor of the Reid Gardner Unit Number 4 power plant (Fluor Power Services); the contractor of the cooling tower (Boecon); and the materials supplier (Las Vegas Building Materials), alleging that they failed to ensure an adequate specification for the concrete mix and to properly supervise the placement of concrete and misrepresented the quality of the aggregate.

After the Nevada Power Company demolished the three remaining cells of the old tower, the court granted the defendant's motion to dismiss the case on the ground that Nevada Power Company and the

Department had disobeyed the court's order regarding demolition. The court also awarded attorney fees to the defendants as additional sanction.

The dismissal and award of attorney fees are being appealed by the Nevada Power Company and the Department. Arguments before the Nevada Supreme Court will take place in January 1992.

#### **South Delta Water Agency v. United States, et al.**

This case was filed July 9, 1982, in Federal District Court for the Eastern District of California by the South Delta Water Agency against the United States, the Department of the Interior, the U.S. Bureau of Reclamation, and the Department.

The case involves the effects of operations by the Central Valley Project (CVP), which is operated by the U.S. Bureau of Reclamation, and the State Water Project on the South Delta Water Agency's service area and the Department of Interior's designation of the New Melones Reservoir service area.

In the suit the South Delta Water Agency alleged that:

1. Central Valley Project operations in the San Joaquin River result in the unlawful reduction in the quantity and quality of water flowing in the San Joaquin River to the southern Delta.
2. The operation of the pumps belonging to SWP and CVP violates southern Delta rights by lowering water levels, reversing flows, and diminishing the influence of the tides.
3. The Secretary of the Interior's designation of the Stanislaus River Basin for purposes of allocating water from New Melones Reservoir violated southern Delta rights by not including the southern Delta in the basin.

The South Delta Water Agency asked for declaratory and injunctive relief, which, if granted, would have restricted certain Delta operations.

The United States and the South Delta Water Agency settled the agency's motion for preliminary injunction to prevent the United States from sign-

ing contracts for New Melones water. The motion was settled by parties agreeing to a stipulation that any contracts entered into by the United States are subject to any superior rights in the southern Delta that are determined in this litigation.

Activity on the suit has been postponed indefinitely while the parties negotiate a settlement. An interim agreement was entered into in 1986, and a draft permanent agreement was agreed to by the parties in August 1990.

Generally, the draft agreement includes provisions for designing, constructing, and operating barriers to improve water levels and circulation in South Delta Water Agency's service area; setting forth the number of interim releases to be made from New Melones Reservoir to improve water quality; and negotiating an amendment to provide a permanent settlement of the remaining issues in dispute concerning the quantity and quality of water and salt load entering the South Delta Water Agency's boundaries through the San Joaquin River system.

The remaining issues are related to activities by the U.S. Bureau of Reclamation, not SWP. Currently, each party is implementing its contract approval process.

#### **United States v. Nevada Power Company**

This suit was filed December 1, 1987, in the U.S. District Court, District of Nevada, by the U.S. Environmental Protection Agency (EPA) against the Nevada Power Company over its operation of Reid Gardner Powerplant's generating station units 3 and 4. The Department was not named as a defendant; however, the Department jointly owns unit number 4 with Nevada Power Company.

In the suit EPA alleged several violations of the Clean Air Act, including failure to meet particulate matter standards and maintain certain files and to report information about required emissions.

The court granted the agency's motion for summary judgment as to Nevada Power Company's

affirmative defenses but denied the agency's motion for summary judgment. A scheduled pre-trial conference has been continued several times while the parties discuss the details of a proposed settlement.

#### **Department of Water Resources v. Lake County**

In this suit, filed in October 1987, the Department challenged the validity of Lake County's ordinance for taxing the generation of electricity as it applies to the Department's Bottle Rock Powerplant and claimed a refund of the \$1.7 million paid to Lake County.

In the suit the Department charged the tax was, in effect, an ad valorem tax on state property and as such, prohibited by California's Constitution.

The court granted the utility's motion for summary judgment, and Sonoma County has appealed the judgment.

### ***Recreational Facilities***

An important part of the State Water Project involves providing Californians and visitors to the state with 35 recreational sites to tour, observe, or use for recreational purposes—fishing, camping, boating, bicycling, and swimming, for example. Seventeen sites are located along the California Aqueduct.

The names of recreational facilities follow. See Figure 6, "Locations of recreational facilities," for the location of each facility. Numbers in the figure correspond to the numbers in the following list:

1. Antelope Lake Recreation Area
2. Frenchman Lake Recreation Area
3. Lake Davis Recreation Area
4. Lake Oroville State Recreation Area
5. White Slough Wildlife Area
6. Bethany Reservoir
7. Lake Del Valle State Recreation Area
8. Bikeway (67 miles)
9. Niels Hansen Fishing Access Site

10. Orestimba Fishing Access Site
11. Walk-In Fishing (63 miles)
12. Cottonwood Road Fishing Access Site
13. San Luis Reservoir State Recreation Area
14. Canyon Road Fishing Access Site
15. Mervel Avenue Fishing Access Site
16. Fairfax Fishing Access Site
17. Walk-In Fishing (208 miles)
18. Three Rocks Fishing Access Site
21. Kettleman City Fishing Access Site
22. Lost Hills Fishing Access Site
23. Buttonwillow Fishing Access Site
24. Pyramid Lake Recreation Area
25. Castaic Lake State Recreation Area
26. Munz Ranch Road Fishing Access Site
27. Bikeway (107 miles)
28. 70th Street East Fishing Access Site
29. Walk-In Fishing (83 miles)
30. Avenue S Fishing Access Site
31. 77th Street East Fishing Access Site
32. Longview Road Fishing Access Site
33. Silverwood Lake State Recreation Area
34. Lake Perris State Recreation Area
35. San Jacinto Wildlife Area

### *Use of Facilities*

The use of SWP's facilities is measured in terms of visitor or recreation days. A visitor day is a measure of use for one person who stops at or enters a visitors' center or participates in a guided tour of SWP facilities. A recreation day is a measure of use for one person who uses the recreational facilities for camping, boating, bicycling, swimming, or some other recreational activity.

In 1990, 6,060,000 recreation days were recorded at SWP facilities as compared with 6,738,000 recreation days recorded in 1989. During 1990 recreation use at some facilities was limited due to low water levels. However, 441,500 visitor days were recorded at SWP facilities, an overall 11.3 percent increase over the 396,600 visitor days recorded in 1989.



**Fig. 6. Locations of recreational facilities**

See Table 6, "Total Number of Visitors' Days Accumulated in 1990, by Location," and Table 7, "Total Number of Recreation Days Accumulated in 1990, by Division and Facility."

Recreational facilities in southern California were used most often; the four largest reservoirs in southern California, Pyramid Lake, Castaic Lake, Silverwood Lake, and Lake Perris, accounted for 59 percent of the total recreation days accumulated in 1990.

In addition, recreational use at the 17 fishing access sites and 107 miles of bikeways along the California Aqueduct totaled 63,600 recreation days, an increase of 6 percent in the number of recreation days accumulated in 1989.

### *Improvements*

Facilities at several locations were improved during 1990. Information about those improvements follows.



TABLE 6  
**Total Number of Visitors' Days Accumulated in 1990  
by Location**

Location	Number of Days		Percent of Increase
	1989	1990	
Project Operations Control Center, Sacramento	200	700	250
Oroville Field Division	135,800	161,100	18.6
Delta Field Division	1,100	1,600	45.4
San Luis Field Division	176,000	187,400	6.4
San Joaquin Field Division	4,000	6,100	52.5
Southern Field Division	79,500	84,600	6.4
Total	396,600	441,500	11.3

TABLE 7  
**Total Number of Recreation Days Accumulated in 1990  
by Division and Facility**

Division and Facility	Number of Days
Oroville Field Division	
Frenchman Lake	211,500
Antelope Lake	63,800
Lake Davis	254,500
Lake Oroville and Thermalito Afterbay	493,700
Thermalito Afterbay and Oroville Wildlife Area	150,000
Total	1,173,500
Delta Field Division	
Lake Del Valle	503,800
Bethany Reservoir	36,800
Fishing Access Sites	
Niels Hansen	100
Orestimba	300
Cottonwood Road	100
California Aqueduct Walk-In Fishing	23,200
Bikeway	900
White Slough Wildlife Area	10,000
Total	575,000
San Luis Field Division	
San Luis Reservoir	267,000
O'Neill Forebay	351,400
Los Banos Reservoir	89,800
Fishing Access Sites	
Canyon Road	200
Mervel Avenue	200
Fairfax	100
Three Rocks	100
Huron	400
Avenal Cutoff	500
California Aqueduct Walk-in Fishing	7,000
Wildlife Areas	18,500
Total	735,200
San Joaquin Field Division	
Fishing Access Sites	
Kettleman City	5,600
Lost Hills	5,200
Buttonwillow	5,500
California Aqueduct Walk-in Fishing	7,400
Total	23,700
Southern Field Division	
Silverwood Lake	626,800
Lake Perris	1,442,400
Pyramid Lake	243,400
Castaic Lake	1,233,300
Fishing Access Sites	
77th Street East	500
Longview Road	100
California Aqueduct Walk-in Fishing	5,900
Bikeway	300
Total	3,552,700
Grand Total	6,060,100

### Lake Oroville

Rehabilitation of the boat ramp and extension were completed at the Bidwell Canyon launching area.

### Pyramid Lake

Construction on the Vista del Lago interchange on Interstate 5 was nearly completed. When fully constructed, the interchange will provide access to the proposed Vista del Lago visitors' center and recreational facilities on Liebre Peninsula.

Construction on the center and facilities is expected to be completed by late summer 1992.

### Castaic Lake

A new area for wind surfing was developed and an aerator was installed in the afterbay to improve water quality. New entry gates were installed at the main entrance to the lake.

### Lake Perris

Construction of a unisex, six-toilet, rest room was constructed in the Sail Cove area.

## Recreational Activities

Several recreational activities were conducted during 1990. Information about those activities follows.

### Fish Plantings

The Department of Fish and Game continued its fish-planting activities at 11 SWP facilities and one facility owned by the Metropolitan Water District of Southern California (Lake Skinner) during 1990.

About 30 percent more trout and fingerlings were planted in 1990 than were planted in 1989 even though no fish were planted in Frenchman Reservoir or the California Aqueduct. See Table 8, "Total Number of Fish Planted in 1990, by Location," for additional information.

In addition, a total of 14,738,800 fish were reared in the ponds located at the Feather River Hatchery and Thermalito Afterbay Rearing Pond, 13 percent more than were reared in 1989. That

figure includes a total of 13,762,300 Chinook salmon and 976,500 steelhead trout.

Of the Chinook salmon produced, 3,042,700 were fingerlings; 8,721,800 were planted as advanced fingerlings; and 1,998,800 were planted as yearlings. Also, a total of 498,400 fingerling steelhead trout were planted as well as 478,100 yearlings.

### ***Pheasant Hunt***

The fourth annual pheasant hunt for 150 junior hunters was held on November 17 and 18 at the White Slough Wildlife Area, a recreational area near Stockton. The hunt is conducted in cooperation with the Department of Fish and Game.

### ***Wilderness Explorations***

At the Lake Del Valle State Recreation Area, a program to provide horseback rides, riding lessons, overnight trips into the Ohlone wilderness area, and related classes and events was operated under contract with Sunol Pack Station.

The program was so successful that the East Bay Regional Parks District plans to provide the program through a long-term contract.

TABLE 8  
**Total Number of Fish Planted in 1990, by Location**  
(Thousands)

Location and Size	Trout				Channel Catfish	Total
	Rainbow	Eagle Lake	Brown	Brook		
Antelope Reservoir						
Catchable	16.2			6.0		22.2
Subcatchable		84.0				84.0
Fingerling		60.0				60.0
Lake Davis						
Catchable		45.5				45.5
Subcatchable		31.5				31.5
Fingerling		90.0				90.0
Lake Oroville						
Catchable			57.4			57.4
Thermalito Forebay						
Catchable	55.2					55.2
Lake Del Valle						
Catchable	47.5					47.5
Los Banos Reservoir						
Catchable	22.0					22.0
Pyramid Lake						
Catchable	68.9					68.9
Subcatchable	23.8					23.8
Castaic Lake						
Catchable	253.0					253.0
Subcatchable					15.3	15.3
Castaic Lagoon						
Catchable	60.1					60.1
Silverwood Lake						
Catchable	175.8					175.8
Subcatchable	125.0				29.7	154.7
Lake Perris						
Catchable	122.8					122.8
Subcatchable	32.0				15.0	47.0
Lake Skinner						
Catchable	69.8					69.8
Subcatchable	48.0					48.0
Grand Total	1,120.1	311.0	57.4	6.0	60.0	1,554.5

TABLE 9  
Total Amounts of Water Delivered, Recreation Days Supported,  
and Energy Generated, 1962 Through 1990

Year	Water Delivered (Acre-feet)								Recreation Supported (Recreation days) (c)	Energy Generated (d (Millions of kWh) (10)
	Entitlement Water			Other Deliveries			Feather River Diversions (b	Total Deliveries (8)		
	Municipal and Industrial (1)	Agri- cultural (2)	Total (3)	Surplus and Unscheduled		Other Water (a (6)				
				Municipal and Industrial (4)	Agri- cultural (5)					
1962						18,289		18,289	30,000	
1963						22,456		22,456	105,000	
1964						32,507		32,507	331,600	
1965						44,105		44,105	449,800	
1966						67,928		67,928	482,700	
1967	5,747	5,791	11,538	0	0	53,605		65,143	455,200	
1968	46,472	125,237	171,709	10,000	111,534	14,777	866,926	1,174,946	931,300	628
1969	34,434	158,586	193,020	0	72,397	18,829	794,374	1,078,620	1,554,800	2,614
1970	47,996	185,997	233,993	0	133,024	38,080	759,759	1,164,856	1,804,800	2,679
1971	85,286	272,054	357,340	2,400	293,619	44,127	778,362	1,475,848	2,085,900	3,302
1972	181,066	430,735	611,801	22,205	401,759	73,127	817,398	1,926,290	1,971,200	1,922
1973	293,824	400,564	694,388	3,161	293,255	43,666	800,743	1,835,213	2,502,000	3,298
1974	418,521	455,556	874,077	4,753	412,923	48,342	911,613	2,251,708	4,073,600	4,672
1975	641,621	582,369	1,223,990	21,043	601,859	67,170	862,218	2,776,280	4,189,300	3,159
1976	818,588	554,414	1,373,002	32,488	547,622	116,962	946,440	3,016,514	4,239,600	2,131
1977	280,919	293,236	574,155	0	0	390,176	581,994	1,546,325	3,951,900	958
1978	742,385	710,314	1,452,699	3,566	13,348	122,916	786,517	2,379,046	5,773,700	2,882
1979	690,659	969,237	1,659,896	66,081	582,308	189,396	882,549	3,380,230	5,298,700	2,485
1980	730,545	799,204	1,529,749	19,722	384,835	48,590	875,045	2,857,941	5,701,900	2,988
1981	1,057,273	852,289	1,909,562	12,000	896,428	283,849	838,557	3,940,396	6,017,800	3,358
1982	928,721	821,303	1,750,024	0	215,873	159,528	776,330	2,901,755	6,187,700	5,097
1983	483,499	701,370	1,184,869	0	13,019	189,302	602,905	1,990,095	5,838,200	5,843
1984	725,925	862,694	1,588,619	3,663	259,254	388,064	832,332	3,071,932	6,273,100	4,667
1985	992,538	1,002,915	1,995,453	9,638	298,034	408,875	870,008	3,582,008	6,639,800	5,237
1986	998,611	997,025	1,995,636	2,595	34,025	197,471	791,737	3,021,464	6,966,039	4,683
1987	1,096,368	1,033,718	2,130,086	6,949	107,958	385,264	831,947	3,462,204	7,228,815	3,951
1988	1,316,820	1,068,302	2,385,122	0	0	521,370	794,834	3,701,326	6,854,300	4,871
1989	1,602,454	1,251,293	2,853,747 (e)	0	0	495,702	809,250	4,158,699	6,738,300	5,566
1990	1,876,072 (f)	706,079 (g)	2,582,151	0	90	466,578	851,247	3,900,066	6,060,100	5,161
Total	16,096,344	15,240,282	31,336,626	220,264	5,673,164	4,951,051	18,663,085	60,844,190	110,737,154	82,152

- a) Includes amounts of preconsolidation repayment, emergency relief, and regulated delivery of local supply water; non-SWP water delivered to Napa County Flood Control and Water Conservation District and the city of San Francisco through SWP facilities; CVP water conveyed (including Decision 1485 and recreation and fish and wildlife water); 1990 Ground Water Demonstration Program, recreation and, exchange water; and water purchased from Yuba County Water District.
- b) Feather River diversions to Joint Water Districts Board and Western Canal Water District.
- c) A recreation day is the visit of one person to a recreation area for any part of one day.
- d) Includes SWP share of generation from Hyatt-Thermalito, Gianelli, Devil Canyon, Warner, Alamo, Castaic, Reid Gardner Unit No. 4, and Bottle Rock power plants.
- e) Includes 149,880 acre-feet of 1988 carryover entitlement delivered in 1989 and 89 acre-feet of 1990 advance entitlement delivered in 1989.
- f) Includes 35,088 acre-feet of 1989 municipal and industrial carry-over entitlement delivered in 1990.
- g) Includes 93,458 acre-feet of 1989 agricultural carry-over entitlement delivered in 1990.





## Part II.

# Meeting Today's Water Needs

### 3. Collecting and Storing Water 25

#### Precipitation and Runoff 25

##### Precipitation 25

##### Runoff 26

#### Conservation and Storage Facilities 27

##### Lake Oroville 27

##### San Luis Reservoir 28

#### Regulatory Storage Facilities 29

##### Lake Del Valle 29

##### Southern Reservoirs 30

### 4. Negotiating Contracts and Agreements 31

#### Long-Term Service Contracts 31

##### Terms 31

##### Amendments 31

##### Charges for Power 32

##### Delivery Dates 32

##### Postponed Deliveries 32

##### Terminations 32

#### Agreements and Amendments 32

##### Agreements 33

##### Kern Fan Element Extraction 33

##### La Hacienda Purchase 33

##### Turn-in Agreements 33

##### Water Exchange Between Districts 34

##### Amendments 34

##### Boundary Modifications 34

##### Santa Barbara Deliveries 35

#### Water Rights Management 35

#### Wildlife Management 36

### 5. Delivering Water 39

#### Water Deliveries and Credits 39

##### Other Water Deliveries 39

##### Make-up Water 40

##### Wet-Weather Water 40

##### Carry-Over Water Approved for Delivery 40

##### Reduction Credits 40

#### Total Amounts Delivered in 1990 40

##### Central Valley Project Water 40

##### Entitlement Water 41

##### Nonproject Water 41

##### Predeliveries of Entitlement Water 41

##### Recreation, Fish, and Wildlife Water 41

##### Regulated Deliveries of Local Supply 41

##### Transfers of Entitlement Water 42

##### Yuba County Water Agency Purchases 42

#### Total Amounts Delivered Since 1962 42

##### Annual Entitlements 42

##### Entitlement Water Conveyed 42

##### Surplus and Unscheduled Water 42

##### Other Water 43

##### Initial Fill Water 43

##### Operational Losses 43

##### Recreation Water 43



## **6. Designing and Constructing Facilities 49**

Design and Construction Activities	49
Oroville Division	49
Hyatt Powerplant	49
Oroville Operations and Maintenance Center	50
Thermalito Powerplant	50
North San Joaquin Division	50
Banks Pumping Plant	50
California Aqueduct	50
Old River Rock Barriers	50
Skinner Fish Facility	51
Suisun Marsh Gates	51
Miscellaneous Projects	51
San Luis Division	51
South San Joaquin Division	52
Coastal Aqueduct	52
Kern Water Bank	52
La Hacienda Water Extraction Facilities	52
Pumping Plants	52
Tehachapi Division	52
Mojave Division	52
Alamo Powerplant	53
East Branch Enlargement	53
Mojave Siphon Powerplant	53
Pearblossom Pumping Plant	53
Santa Ana Division	54
West Branch	54
Gorman Creek Channel	54
Vaquero Recreational Facility	54
Vista del Lago Visitors' Center	54
Miscellaneous Design and Construction Activities	55
California Water Center	55
Repairs and Modifications	55
San Bernardino Tunnel Intake Tower	55
Land and Right-of-Way Activities	56

## **7. Ensuring Safety of Facilities 61**

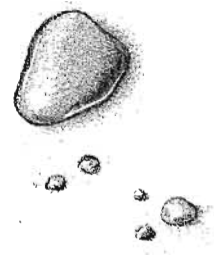
Inspection and Maintenance	61
Inspection of Facilities	61
Bethany Dam	62
Little Panoche Detention Dam	62
Los Banos Detention Dam	62
O'Neill Dam	62
Peace Valley and Quail Embankments	62
San Bernardino Tunnel Intake Tower	62
B. F. Sisk San Luis Dam	62
Thermalito Diversion and Afterbay Dams	62
Maintenance of Facilities	62
Arroyo Pasajero Improvements	633
Repairs and Modifications	63
Independent Reviews	63
Federal Agencies	63
Consultants	64

## **8. Generating, Buying, and Selling Power 67**

Total Energy Used	67
Energy Produced	68
Energy Purchased	68
Long-Term Contracts	68
Short-Term Purchases	69
Power Sold	69



### 3. Collecting and Storing Water



**T**O MEET ITS CONTRACTUAL OBLIGATIONS, the State Water Project (SWP) is involved in activities ranging from monitoring precipitation and calculating runoff to coordinating the operation of a complex system of dams and reservoirs. This chapter includes information about those activities. The information is based on the 1990 calendar year and the 1989-90 water year.

#### *Precipitation and Runoff*

In a typical year, California receives about 193 million acre-feet of water as rain or snow (an acre-foot of water is the amount of water needed to cover an acre of ground a foot deep, the amount normally used each year by a family of five). Of the 193 million acre-feet, about 75 percent falls in northern California (although about 75 percent of the demand for it originates in highly populated southern California).

Most of the water either soaks into the ground, is consumed by plants, or evaporates. However, some runs off into streams or rivers and eventually flows into the Sacramento-San Joaquin Delta, the primary source of SWP's water supply.

That water supply is unpredictable, however, because of changes in the weather and other factors. For example, total runoff in the Sacramento River Basin in northern California has ranged from as little as 5.1 million acre-feet in 1977 to more than 38 million acre-feet in 1983 (the

50-year average is about 18 million acre-feet). This runoff constitutes SWP's primary water supply.

When planning and coordinating SWP's operations, and to meet its contractual obligations, the Department carefully monitors and calculates that variable water supply in terms of precipitation and runoff and uses that information to determine the amount of water that can be delivered during the year.

Those monitoring activities are conducted and recorded according to the water year, the natural cycle in which rainfall and runoff occur in the state. In California, the water year extends from October 1 through September 30 (see Figure 8, "Statewide precipitation by hydrological area, 1989-90 water year," on the following page).

The data recorded throughout the water year is used by the Department to determine, in part, the amount of runoff that should be retained in storage should the coming year be "dry."

#### *Precipitation*

The total amount of precipitation recorded statewide for the 1989-90 water year was well below average—only 70 percent of the average annual rainfall.<sup>1</sup> The highest amount was recorded in the Colorado River Area, 75 percent; the lowest

BECAUSE OF THE VARIABILITY OF CALIFORNIA'S WATER SUPPLY, SWP CAREFULLY MONITORS PRECIPITATION AND RUNOFF TO HELP ENSURE THAT ITS CONTRACTUAL OBLIGATIONS TO CONTRACTORS ARE MET.

<sup>1</sup>The statewide average annual rainfall is the 50-year average of amounts of rainfall recorded at each of the ten hydrological areas located throughout the state. See Figure 8, "Statewide precipitation by hydrological area, 1989-90 water year," on the next page.



**Fig. 8. Statewide precipitation by hydrological area, 1989-90 water year**

amount, in the Central and South Coast areas, 55 percent.

The amount of precipitation recorded in the Sacramento Basin, which includes the Feather River drainage area, the primary source of SWP's water supply, was well below average. Even though twice the normal amount of precipitation was recorded in October 1989, overall dry conditions continued; and December 1989 was listed as the driest month on record.

Precipitation increased to over 300 percent of average for May due to storms late in the season. Because of those storms, SWP's water supply increased; however, the 1989-90 water year ended with the level of precipitation at only 75 percent of average in the Sacramento Basin.

### *Runoff*

During the water year, the Department calculates in acre-feet the amount of unimpaired runoff to

streams in all hydrological areas in California.<sup>2</sup>

Those amounts are reported in *Water Conditions in California* (Bulletin 120), published by the Department in February, March, April, and May of each water year.

In addition to including information about first-of-the-month conditions for the months of February through May, the bulletins include forecasts of unimpaired runoff for the remaining months of the water year.

All forecasts of unimpaired runoff are considered by SWP when planning operations. However, the May 1 forecast of the amount of unimpaired runoff to streams in the Sacramento River Basin is particularly significant. The operations of both the Central Valley Project (CVP) and SWP are regulated according to the water year classification based on that forecast.<sup>3</sup>

As reported in the May 1, 1990, edition of *Water Conditions in California*, the amount of unimpaired runoff to streams in the Sacramento River for the 1989-90 water year was forecast to be 8.2 million acre-feet or 43 percent of average. Based on that forecast, the water year was classified as *critical* for fish and wildlife and for agricultural, municipal, and industrial uses.

Although the actual amount of unimpaired runoff recorded for the 1989-90 water year was 9.2 million acre-feet or 49 percent of average, that amount was not enough to warrant a change in the *critical* classification.

Because of the *critical* classification, CVP and SWP operations in the Sacramento-San Joaquin

<sup>2</sup>Unimpaired runoff is defined as the natural water production of a river basin, unaltered by upstream diversions, storage, or exports or imports of water to or from other watersheds.

<sup>3</sup>Water year classifications (*wet*, *above normal*, *below normal*, *dry*, and *critical*) are based on criteria included in Table II of *Water Right Decision 1485: Sacramento-San Joaquin Delta and Suisun Marsh*, issued by the State Water Resources Control Board in August, 1978. The water year classification is used to set Delta water quality and flow requirements for SWP and CVP. In 1986 both water projects signed a coordinated operating agreement (COA), which includes formulas for sharing proportionate responsibility for releases from reservoirs to support Delta water quality and meet standards included in Decision 1485.

Delta were directly affected. Both projects worked together to ensure water quality by:

- Monitoring water quality at various points in the Delta
- Modifying releases and exports when necessary

Because both projects coordinate operations, inflows and storage levels at the projects' primary reservoirs, Lake Oroville (SWP) and Shasta Lake (CVP), are of interest to both water projects. See Figure 9, "Monthly amounts of unimpaired runoff into Lake Oroville from Feather River, 1988 through 1990 water years"; Figure 10, "Monthly amounts of unimpaired runoff into Shasta Lake, 1988 through 1990 water years"; Figure 11, "Cumulative amount of unimpaired runoff into Lake Oroville from Feather River, 1990 water year"; and Figure 12, "Cumulative amount of unimpaired runoff into Shasta Lake, 1990 water year."

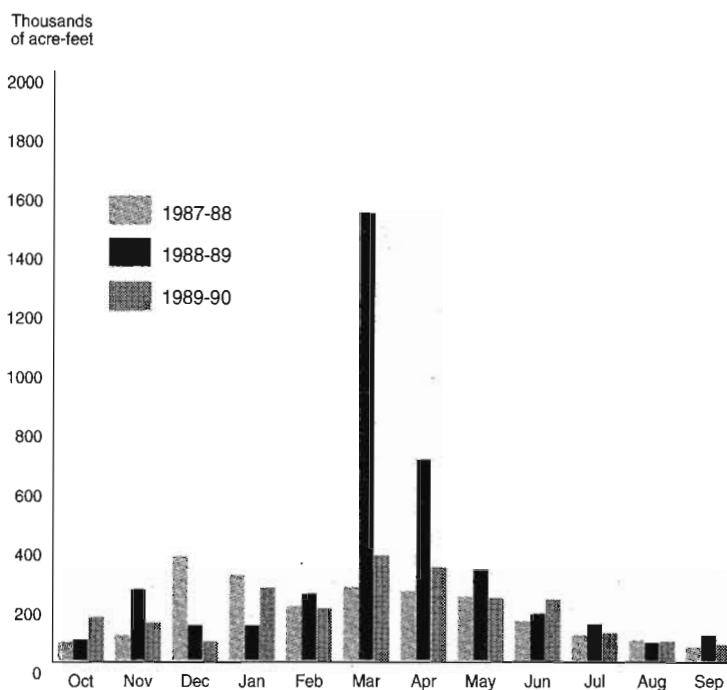
## Conservation and Storage Facilities

To collect and store water for deliveries in the future, SWP operates a complex system of 22 dams and reservoirs. Two reservoirs, Lake Oroville in northern California and San Luis in the central part of the state, are SWP's primary conservation facilities. The remaining 20 reservoirs are used primarily to regulate the conserved supply into water delivery patterns to fit local needs.

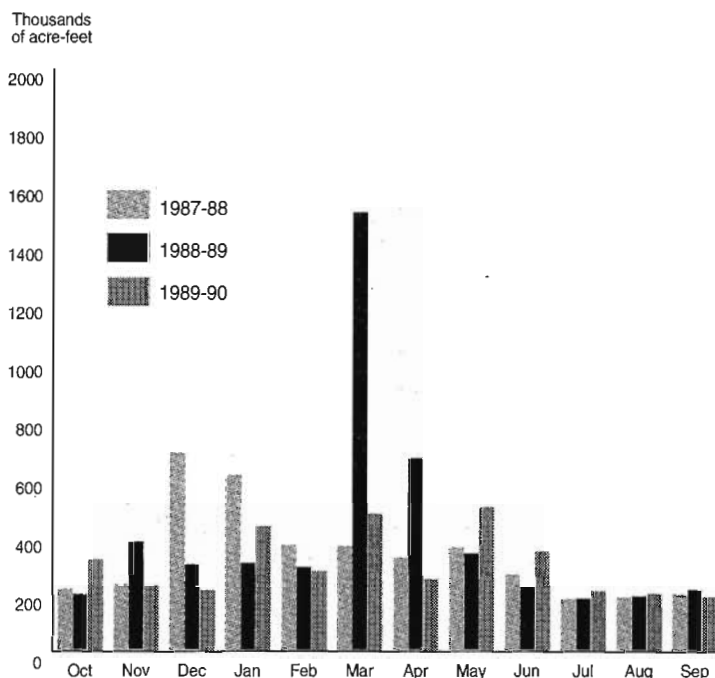
Information about those reservoirs, including amounts of unimpaired runoff to Lake Oroville and storage levels for SWP's conservation and other storage facilities, may be found in the following paragraphs. The information is based on the 1989-90 water year.

### Lake Oroville

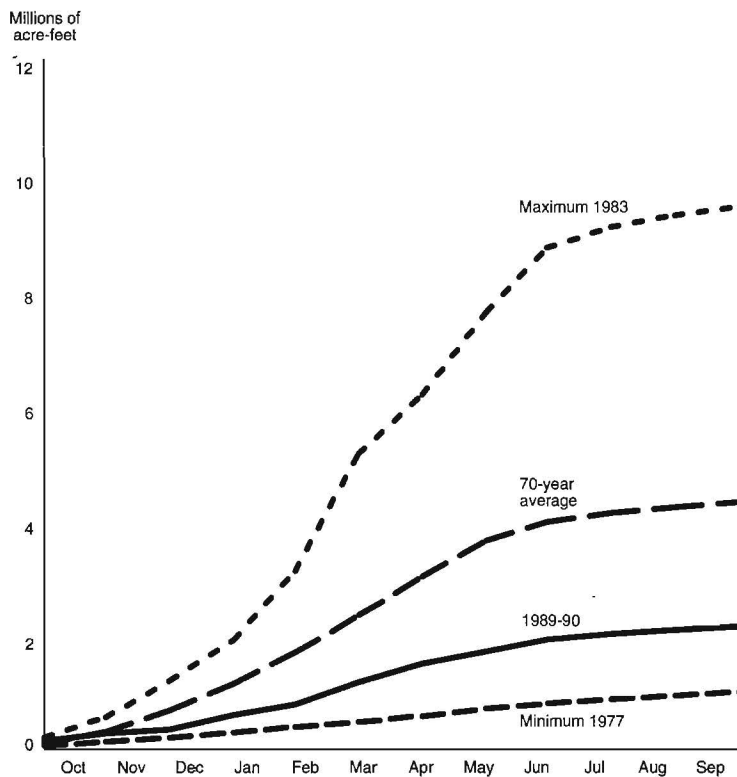
Lake Oroville, the keystone of the State Water Project, has a normal maximum operational capacity of 3,537,580 acre-feet. Runoff from the



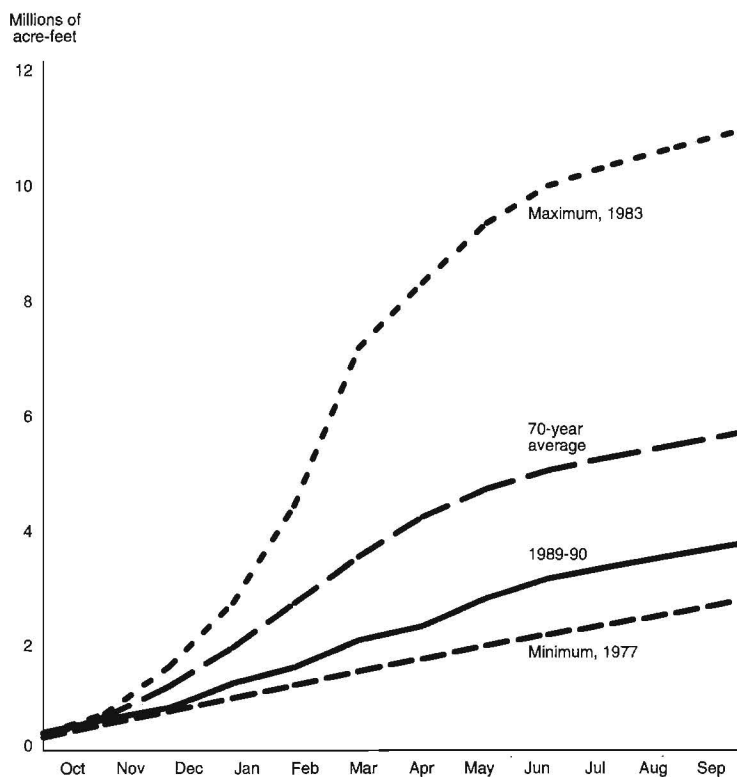
**Fig. 9. Monthly amounts of unimpaired runoff into Lake Oroville from Feather River, 1988 through 1990 water years**



**Fig. 10. Monthly amounts of unimpaired runoff into Shasta Lake, 1988 through 1990 water years**



**Fig. 11. Cumulative amount of unimpaired runoff into Lake Oroville from Feather River, 1990 water year**



**Fig. 12. Cumulative amount of unimpaired runoff into Shasta Lake, 1990 water year**

Feather River is collected and stored in the reservoir; and its release to the Sacramento-San Joaquin Delta is regulated from the Oroville Dam and Reservoir and Thermalito Afterbay.

Located 85 miles north of Sacramento, Lake Oroville is one of SWP's most popular recreational facilities. At full reservoir, Lake Oroville has a surface area of 15,805 acres and a shoreline of 167 miles.

In years of normal operations, Lake Oroville is drawn down prior to the flood season to create the storage capacity necessary to prevent downstream floods. During 1990, however, storage levels remained far below any drawdown requirements for flood control because of the ongoing drought.

Specifically, storage during January and February remained above levels for the same periods in 1989. However, because of continuing dry conditions through May, storage fell well below previous levels. See Figure 13, "End-of-month storage levels in Lake Oroville, 1989 and 1990 calendar years," on the next page.

The total amount of unimpaired runoff to Lake Oroville for the 1989-90 water year totaled only 2.1 million acre-feet, 48 percent of average. Because of that small amount, storage peaked at only 2,101,924 acre-feet, 60 percent of normal maximum operating capacity, on March 26, 1990, and declined to 987,094 acre-feet, or 28 percent of normal maximum operating capacity, by December 31, 1990 (see Figure 13). The only other time storage in Lake Oroville dropped below one million acre-feet since its original filling was in 1977.

### *San Luis Reservoir*

The San Luis Reservoir, located about 12 miles west of the city of Los Banos in the eastern foothills of the Diablo Mountain Range, is operated jointly with the U.S. Bureau of Reclamation according to operating procedures finalized in June 1981.

With a normal operating capacity of 2,028,000 acre-feet, San Luis Reservoir is the largest off-

stream reservoir in the United States. San Luis was designed to store surplus water pumped from the Sacramento-San Joaquin Delta through the California Aqueduct and the Delta-Mendota Canal during periods of high runoff. Later in the year, the stored water is released for distribution to state and federal service areas. The State Water Project's share of San Luis's 2,028,000 acre-feet capacity is 1,062,000 acre-feet.

At the beginning of 1990, San Luis Reservoir contained 61 percent of its normal maximum operating capacity; and SWP's share was 59 percent of its respective maximum.

By mid-October SWP had completely exhausted its share of storage; and from October 23 through November 21, 1990, SWP borrowed 100,000 acre-feet of water from the U.S. Bureau of Reclamation. At the end of 1990, the 100,000 acre-feet of water had not been replaced; and SWP's share of storage was only 5,158 acre-feet. See Figure 14, "End-of-month storage levels in San Luis Reservoir, 1989 and 1990 calendar years."

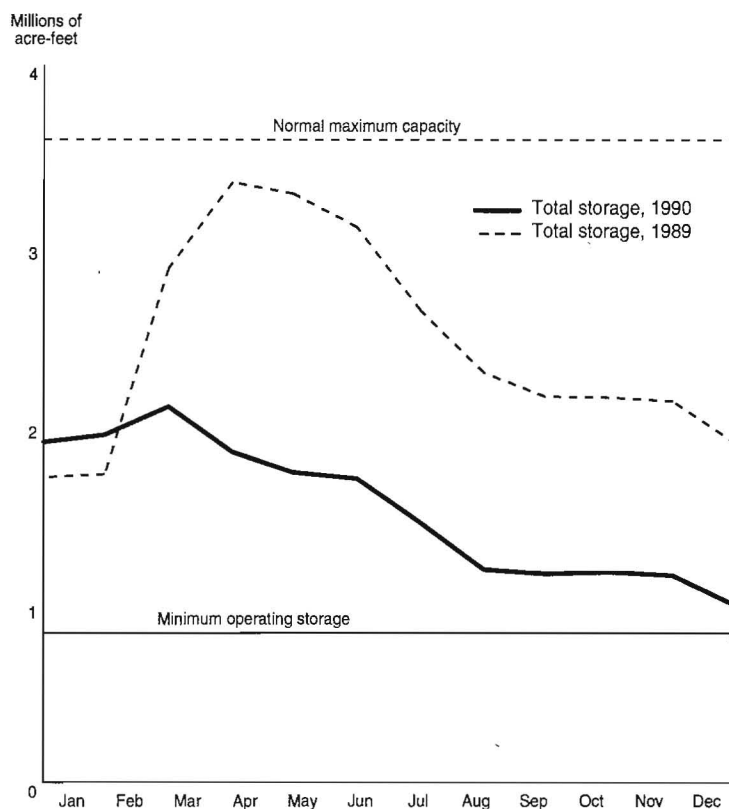
## Regulatory Storage Facilities

A number of SWP's reservoirs are used by SWP for regulatory and emergency storage. The five largest are Lake Del Valle, located in Alameda County; and Pyramid Lake, Castaic Lake, Silverwood Lake, and Lake Perris, located in southern California. In addition, those reservoirs are extensively used for recreational activities.

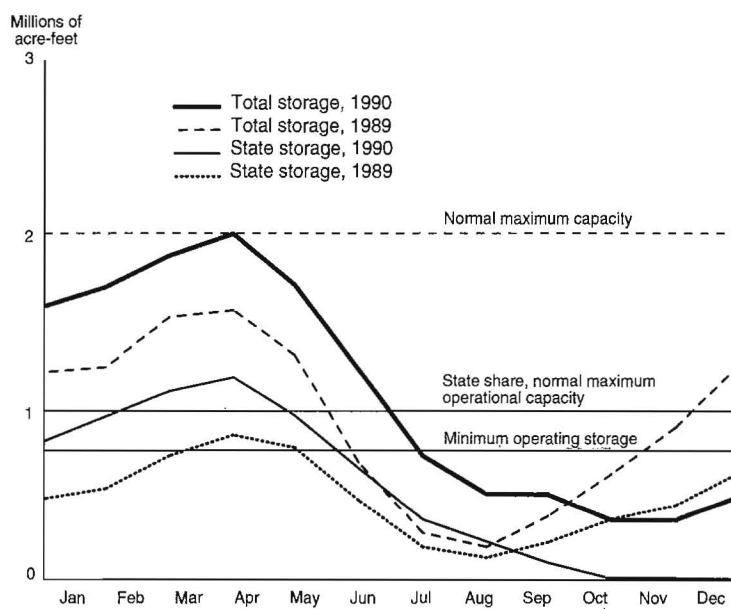
Lake Del Valle is located approximately four miles from the city of Livermore. The four southern reservoirs, Pyramid Lake, Castaic Lake, Silverwood Lake, and Lake Perris, are located near the metropolitan areas of southern California, where water supplies are primarily imported.

### Lake Del Valle

Lake Del Valle, located off the South Bay Aqueduct, is used primarily to store water used in Santa Clara and Alameda counties. At the beginning of 1990, Lake Del Valle held 28,486 acre-feet



**Fig. 13. End-of-month storage levels in Lake Oroville, 1989 and 1990 calendar years**



**Fig. 14. End-of-month storage levels in San Luis Reservoir, 1989 and 1990 calendar years**

of water, 71 percent of normal maximum operating capacity.

By June, storage had increased to 39,232 acre-feet or 99 percent of normal maximum operating capacity to provide for recreational activities and to serve as a buffer during the summer months when the demand for water is high.

At the end of 1990, storage in Lake Del Valle had dropped to 29,527 acre-feet or 74 percent of normal maximum operating capacity.

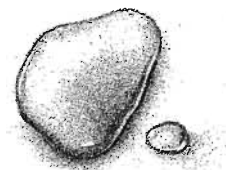
### *Southern Reservoirs*

During normal operating conditions, the Department maintains its four southern reservoirs (Pyramid Lake, Castaic Lake, Silverwood Lake, and Lake Perris) at or near full operating capacity to ensure uninterrupted deliveries of water to southern California contractors.

Those SWP reservoirs, used to regulate water supplies within the year, generally are filled by about May 1 of each year to ensure supplies are available to meet peak summertime demands within the contractors' service areas. At the beginning of 1990, those reservoirs held 531,000 acre-feet of water, 77 percent of normal maximum operating capacity.



## 4. Negotiating Contracts and Agreements



**T**HE LONG-TERM CONTRACTS BETWEEN the Department of Water Resources and water contractors provide for water service from the State Water Project (SWP). In return for water service, the agencies contractually agree to repay all SWP's capital and operating costs allocated to water supply.

This chapter includes information about SWP's long-term service contracts as well as about amendments to them. In addition, information about agreements with other agencies and amendments to those agreements is included.

### *Long-Term Service Contracts*

The first water service contract was signed with the Metropolitan Water District of Southern California on November 4, 1960. The contract was negotiated by the Department and the district according to terms contained in *Contracting Principles for Water Service Contracts*. Those terms, some of the most rigid ever devised for a water project, were announced by Governor Edmund G. Brown on January 20, 1960.

The Metropolitan Water District's contract served as the prototype for all water contracts; and by the end of 1967, 31 agencies had contracted for water. Today, SWP has long-term water service contracts with 30 agencies (see Table 5 on page 8).

### *Terms*

Basically, all water contracts signed in the 1960s included an estimate of the date water would first be delivered as well as a schedule of the amount of water the agency could expect to be delivered annually (annual entitlement). Generally, those amounts were designed to increase yearly until about 1990 when the maximum amount of annual entitlement was to be reached.

The contracts were designed to be in place for 75 years or until all bonds sold as part of the California Water Resources Development Bond Act were repaid, whichever period was longer. (See Chapter 20 for additional information about the Water Resources Development Bond Act.)

The total combined annual entitlement for all water contracting agencies was limited to 4,230,000 acre-feet of water. As a result of contract amendments in the 1980s, the terms of the contracts are now defined to extend until 2035 and the combined annual entitlements now total 4,217,786.

### *Amendments*

Since the original contracts were signed by the Department and local agencies, many have been amended to incorporate mutually desired changes.

The amendments involve items such as increased or decreased amounts of annual entitlements; the Delta Water Charge, the uniform charge

THE FIRST WATER SERVICE CONTRACT WAS SIGNED WITH THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA ON NOVEMBER 4, 1960. TODAY, SWP HAS LONG-TERM CONTRACTS WITH 30 AGENCIES.

per acre-foot of entitlement water levied to cover costs of facilities necessary to develop and conserve the SWP's water supply; and amounts of water in excess of entitlement water (excess capacity) available for purchase.

During the period from July 1, 1990, to June 30, 1991, 58 amendments to long-term water supply contracts were signed. Those amendments were designed to determine charges for and set delivery dates of surplus and unscheduled water; allow contractors to postpone delivery of or carry over a portion of their annual entitlement water; and terminate a water supply contract.<sup>1</sup>

Information about amendments, arranged alphabetically according to subject, follows.

### *Carry-Over Water Deliveries*

Twenty-five long-term contractors have signed an amendment for carrying over a portion of their annual entitlement scheduled for delivery during October, November, and December of one year for delivery during the first three months of the following year.

The delayed delivery of entitlement water, applicable if certain conditions are met, were designed to result in a more efficient and beneficial use of water.

### *Charges for Power*

An amendment designed to change the procedure for determining the charge for power used to pump surplus and unscheduled water was drafted by the Department and signed by 25 of the 29 contractors.

Previously, when SWP power was used to pump surplus water, the charge was based on the market rate of energy. The amendment, effective January 1, 1991, provides that the charge for pumping surplus water will be based on a melded power rate.

<sup>1</sup>See Table 10, "Amendments to Water Supply Contracts, June 30, 1991, by Service Area," at the end of this chapter for information about amendments negotiated since the original water supply contracts were signed, except for information about revisions to the entitlement schedules included in Table A, "Annual Entitlements," of the long-term contracts.

### *Delivery of Surplus Water*

The Solano County Water Agency and the Metropolitan Water District of Southern California signed amendments for scheduling the delivery of surplus or unscheduled water when the Department declares it to be available.

### *Terminations*

Amendment number 16 to the contract between the Department and Castaic Lake Water Agency was executed on January 3, 1991. The amendment, also signed by Devil's Den Water District, includes provisions for terminating Devil's Den's water supply contract with the state effective January 1, 1992.<sup>2</sup>

When the contract with Devil's Den is terminated, Castaic Lake Water Agency, which purchased approximately 90 percent of the property located within the Devil's Den Water District, will assume all remaining benefits and financial obligations of the Devil's Den contract. The amendment also includes information about the conditions and priorities for delivery of Devil's Den Water District's entitlement water.

### *Agreements and Amendments*

During the period from June 30, 1990, to June 30, 1991, the Department entered into various agreements with contractors and other agencies. Those agreements involved such transactions as purchasing, storing, exchanging, and delivering water.

In addition, during the same period, the Department amended some previous agreements, including those involving boundary modifications, groundwater storage programs, and water rights.

Information about new agreements and amendments to agreements previously signed follow. The information is arranged alphabetically according to subject.

<sup>2</sup>See Bulletin 132-90, *Management of the State Water Project*, page 59, "Devil's Den-Castaic Lake Negotiations," for additional information about the purchase.

## ***Agreements***

Information about agreements with Kern County Water Agency (water extraction); La Hacienda, Inc. (water purchase); turn-in agreements with various contractors; and a water exchange between the Metropolitan Water District of Southern California and the San Bernardino Valley Municipal Water District follows.

### ***Kern Fan Element Extraction***

The contract between the Department of Water Resources and the Kern County Water Agency was signed on July 23, 1990.

That agreement included terms and conditions under which Kern County Water Agency would be allowed to enter the Department's Kern Fan Element property right-of-way and perform work on seven existing extraction wells, construct conveyance facilities, and extract up to 44,000 acre-feet of groundwater for delivery to the Cross Valley Canal.

The groundwater extracted then would be provided to Cawelo Water District, a member unit of the agency, which needed an emergency water supply.

Under terms of the agreement, the agency paid the Department an administrative fee of \$2,000 and a unit pumping charge of \$21 for each acre-foot of water extracted or \$33,495 for 1,595 acre-feet of water. The Department reimbursed the agency \$102,311 for costs incurred by the agency for work of benefit to SWP.

### ***La Hacienda Purchase***

On October 16, 1990, the Department signed a contract for purchasing recharged groundwater (surface water that has been recharged into the underground) from La Hacienda, Inc.

That agreement provided for the purchase by the Department of 98,005 acre-feet of groundwater from La Hacienda, Inc., with Kern County Water Agency acting as an intermediary in the purchase.

The water, which originated as Kern River water that was diverted and recharged in the Kern County

Groundwater Basin during high-flow periods in the 1970s and 1980s, was purchased at a total cost of \$45.29 per acre-foot.

In connection with the purchase, on December 20, 1990, the Department also signed an agreement with the Kern County Water Agency for operating the Hacienda Groundwater Program.

The agreement contained provisions for the agency to operate the Department's extraction and conveyance facilities located on the Kern Fan Element property. Those facilities are necessary to extract and convey the 98,005 acre-feet of water purchased from La Hacienda, Inc., for SWP's use.

According to terms of the agreement, the agency may extract a maximum of 50,000 acre-feet of groundwater for the Department in any one year and transport the water to the Cross Valley and Alejandro canals, where it will be moved to the California Aqueduct by direct delivery or by exchange for use by SWP.

The agreement was structured to make additional water available in years when SWP's contractors are receiving less than 50 percent of their annual entitlement requests.

### ***Turn-in Agreements***

Because of the continued critical drought, the Department was not able to deliver entitlement water to agricultural water users during 1991. To help those users, the Department allowed contractors who have groundwater supplies to develop facilities to pump groundwater into the California Aqueduct and use SWP facilities to:

1. Convey water for immediate use.
2. Through the San Luis Reservoir, store water for conveyance and delivery later in the year.

Nine agreements were signed; and to implement those contracts, the local districts were required to construct temporary turn-in facilities. Each well used to discharge water into the California Aqueduct was tested and the water quality approved before the water was introduced.

The names of agencies with whom the Department has signed an agreement as well as information about the purpose of the contract follows.

*Antelope Valley-East Kern Water Agency.* For conveyance of local water supplies.

*Dudley Ridge Water District.* Up to 1,000 acre-feet of water to be advanced to the district and a like amount of local water introduced in return.

*Kern County Water Agency.* For conveyance, storage, and subsequent return of local water introduced from the Cross Valley Canal.

*Kern County Water Agency and Berrenda Mesa Water District.* For conveyance of local district water supplies on the Coastal Branch.

*Kern County Water Agency, Buena Vista Water Storage District, and Henry Miller Water District.* For conveyance, storage, and subsequent return of local water introduced from Buena Vista Aquatic Lakes.

*Kern County Water Agency and West Kern Water District.* For conveyance of local district water supplies using an existing pipeline that crosses over and discharges into the California Aqueduct.

*Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District.* For conveyance and storage for subsequent return of local water supplies.

*Oak Flat Water District.* Up to 200 acre-feet of water to be advanced to the district and a like amount of local water introduced in return.

*San Bernardino Valley Municipal Water District.* For conveyance and storage for subsequent return of local water supplies from the Santa Ana River and Mill Creek.

#### ***Water Exchange Between Districts***

A cooperative interchange agreement between the Department, the Metropolitan Water District of Southern California, and the San Bernardino Valley Municipal Water District, was signed on January 9, 1990.

That agreement was designed to improve the reliability of water service to member agencies of

the Metropolitan Water District of Southern California during the scheduled outage of Devil Canyon Powerplant from December 1, 1989, through February 2, 1990.

According to terms of the agreement, San Bernardino was allowed to transport a maximum of 4,000 acre-feet of water from the Santa Ana River and Mill Creek into Devil Canyon Afterbay through its San Bernardino Valley Foothill Pipeline, where it would be delivered from the afterbay to the Metropolitan Water District through the district's Rialto Pipeline.

The Metropolitan Water District would then return an equal amount of its entitlement water from the SWP to San Bernardino later in the year. However, because of the Metropolitan Water District's reduced demand for water during the outage period, no water was ever transferred under this one-year agreement.

#### ***Amendments***

This section includes information about amendments to agreements previously issued. Those amendments involve modifications of Joint Water Districts' service area boundaries; a water exchange program with Western Canal Water District; water deliveries to Santa Barbara County Flood Control and Water Conservation District; water rights management with South Delta Water Agency, western Delta industrial water users, western Delta municipal water users, and Delta agricultural water users; and wildlife management.

#### ***Boundary Modifications***

In August 1990 the Joint Water Districts Board (JWDB) requested that the Department modify its service area boundary included in the May 27, 1969, agreement signed with the Department. On January 25, 1991, the Department and JWDB executed the first amendment to that May 27, 1969, agreement.

According to the amendment, JWDB will annex approximately 8,700 acres of land to its service area. The lands are located downstream from exist-

ing points of diversion and can readily recapture JWDB tailwater for crop irrigation.

The amendment does not provide for any changes to JWDB's contractual annual water entitlement or for building new diversion facilities.

### ***Santa Barbara Deliveries***

Beginning in February 1991, after its fifth year of critical drought, Santa Barbara County was able to take delivery of SWP water.

According to provisions of the January 3, 1991, letter agreement, the Department conveyed entitlement water for Santa Barbara County through the California Aqueduct to Castaic Lake.

Water delivered to Santa Barbara from Castaic Lake was made through a series of wheeling and exchange agreements with coastal water agencies. Through the coordinated effort of those agencies, SWP planned to convey up to 3,600 acre-feet of water to Santa Barbara County during 1991.

### ***Water Rights Management***

This section includes information about Delta agricultural water users, including South Delta Water Agency and western Delta industrial and municipal water users.

*Delta Agricultural Water Users.* The Department has sought contracts with Delta agricultural agencies for more than ten years to help SWP meet necessary water level, circulation, and quality standards throughout each agency's area.

Among the six Delta agricultural water agencies that replaced the Delta Water Agency in 1974, two—North Delta Water Agency and East Contra Costa Irrigation District—signed contracts with the Department in 1981.

In addition, The Department is conducting periodic informational meetings with the Central Delta Water Agency and requesting to begin negotiations on contracts designed to meet that agency's needs.

In September 1990 the Department completed negotiations for a long-term contract with South Delta Water Agency (SDWA) and the U.S. Bureau

of Reclamation (USBR). Those negotiations began in 1982 when SDWA filed a lawsuit against the Department and USBR over the effects of SWP and Central Valley Project (CVP) operations on water quality in the southern Delta. In its lawsuit SDWA identified problems with water levels and circulation.

To determine the appropriate alternatives for alleviating problems with water levels and circulation, the Department and USBR conducted hydrodynamic simulations of (1) flow requirements of SDWA channels under various SWP and CVP operating conditions; (2) boundary conditions; and (3) San Joaquin River flows.

At this time, the Department, SDWA and USBR are working to secure approvals from control agencies to sign the contract, which represents the negotiators' recommendations for settlements of the lawsuit with no admission of liability.

According to provisions of the contract, parties agree to proceed with the design, construction, and operation of certain barrier facilities in the channels of SDWA, thus resolving those portions of the lawsuit relating to the alleged impacts of SWP's and/or CVP's export pumping operations.

In addition, the contract includes amounts of certain interim releases to be made from New Melones Reservoir and other related actions to be taken by USBR as a temporary solution to that portion of the litigation relating to San Joaquin River flows and water quality as measured at Vernalis.

The contract also includes the framework for USBR and SDWA to negotiate an amendment to the contract to provide a permanent settlement to the remaining issues in dispute concerning the quantity of quality of water and salt entering SDWA from the south through the San Joaquin River system.

As required by the National Environmental Policy Act and the California Environmental Quality Act, the Department and USBR have released a draft environmental impact report and environmental impact statement in which the impacts of implementing this contract as well as

other aspects of the South Delta Water Management Plan are examined (see Chapter 11, "Managing Delta Resources," for additional information).

*Western Delta Industrial Water Users.* Industries near Antioch and Pittsburg use offshore water for processing. When offshore water quality falls below the industries' requirements, a substitute supply is provided through the Contra Costa Canal.

According to terms of a water entitlement contract executed in 1987, the Department makes payments to Fibreboard Corporation and to its successors (now Gaylord Container Corporation) for water years 1986-87, 1987-88, 1988-89, and 1989-90 to compensate for added costs it incurred to operate a mill due to the substitute water supply and water treatment necessitated by the operation of SWP.

In addition, the Department is negotiating a second agreement with Gaylord Corporation regarding another mill it owns downstream of the mill it purchased from Fibreboard. In January 1991, the Department and Gaylord tentatively agreed on the contract's language.

*Western Delta Municipal Water Users.* To address the costs of substitute municipal water supplies in the Antioch-Pittsburg area, the Department has signed a contract with the Contra Costa Water District (CCWD) to compensate it for municipal water diversions at Mallard slough near Pittsburg (1967) and with the city of Antioch for its municipal water diversions at the foot of A Street in Antioch.

According to terms of the contract, the Department will compensate each agency for additional costs of purchasing a substitute water supply from the Contra Costa Canal to replace offshore usable quality water supplies lost because of SWP's operations. Credits for the number of days of above-average offshore water supplies of usable quality accrue to offset the number of below-average days in future years.

During the 1989-90 water year, both agencies had below-average water supplies of usable quality as defined in the contracts. The water-year standard

for CCWD is 142 days; however, water of usable quality was not available to CCWD during the water year. Antioch's water-year standard is 208 days; however, usable water was available only one day.

' Because both agencies had below-average water supplies of usable quality in the 1988-89 water year, the number of deficient days (142 for CCWD and 207 for Antioch) were not offset by any accumulated credits. Consequently the Department made compensation payments of \$22,831 to CCWD for 4,477 acre-feet of water of usable quality and \$381,424 to Antioch for 1,571 acre-feet.

### *Wildlife Management*

On January 26, 1990, the Department of Water Resources, Department of Fish and Game, and the U.S. Bureau of Reclamation signed the first amendment to the 1974 agreement for the development, management, and maintenance of wildlife habitat on the Department's land in the San Joaquin Valley adjacent to the California Aqueduct.

The amendment results in the addition of the Pilibos Wildlife Management Area to the list of approved sites for development of wildlife habitat and clarification of responsibilities for providing water necessary for irrigating the habitat.

Since 1980 the area had been receiving an average of 150 acre-feet of water from SWP and 120 acre-feet of water from the U.S. Bureau of Reclamation each year according to the existing agreement. The amendment helps to ensure that water will continue to be delivered to the Pilibos site and to other sites as they are developed.

TABLE 10  
Amendments to Water Supply Contracts, June 30, 1991, by Service Area

Contracting Agency	Minimum Project Yield Increased	Supplemental Conservation Facilities Costs Delayed			Project Interest Rate Modified	Surcharge and Surcharge Credit Provisions						Wet Weather Provisions Added	Surplus Water Provisions		Turnout Construction by Agency	Peaking Service		Annual Entitlements Revised	Excess Capacity Purchased	Article 28 Revised	Repayment Period and Contract Term Revised	Special Conditions Added	Contract Issues Resolved (a)	Enlargement of East Branch Aqueduct Added	Water Revenue Bonds Added	Article 17(e) Added	
		1970	1971	1972 Unal Construction		Added	Revised	Through 1969	1970	1971	Deleted		Added	Revised		Increased	Decreased										
Upper Feather River Area																											
City of Yuba City	1	2	2	2	2		1							1					1,4		3		5		6		
County of Butte	1	3	3	3	3		1	2		4	5			1					6,8,11		7		9		10	12	
Plumas County Flood Control and Water Conservation District	1	3	5	6	3		1	2	4	7	8			10,15					9	11		12			13		
North Bay Area																											
Napa County Flood Control and Water Conservation District	1	3	4	5	3		1				6			1,15,16				8,9,10,12		13	7	1,2,12	11		13	14	
Solano County Water Agency	1	2		11	2		1							1,5,14,15		1		6,7,11	10		6	6,10	9		12	13	
South Bay Area																											
Alameda County Flood Control and Water Conservation District, Zone 7	2	6	8	9	6	2		5	7	10	11	1		2,12,17	3			1,4			13	1	14		15	16	
Alameda County Water District	1	4	5	7	4	1		3		8	9	S (b)	1	11,12,18	2					10	13	1,6,16	14		15	17	
Santa Clara Valley Water District	2	6	8	10	6	2		5	7	11	12	1	1	2,14,15,17,21	3			1,4		13	16	1,9	18		19	20	
San Joaquin Valley Area																											
County of Kings		2	3	4	2			1		5	6	S	S	8,13						7	9		10		11	12	
Devil's Den Water District	1	5	7	8	5			4	6	9	10			1,12,13,15				1,3		11	14	2	16		17	18	
Dudley Ridge Water District	1	6	8	9	6			5	7	10	11			1,13,14,16,20				1,2,3,4	12		15		17		18	19	
Empire West Side Irrigation District	1	4	6	7	4			3	6	8	9	S		1,11,12,14,18				2	10		13		15		16	17	
Kern County Water Agency	1	4	6	8	4			3	5	9	10			1,12,14,16,22				1,2,18		11	15	7,13,19	17		20		
Oak Flat Water District		3	5	6	3			2	4	7	9	S	S	11,12,14,18	1			8		10	13		15		16	17	
Tulare Lake Basin Water Storage District	2	5	6	7	5			4		8	10	S		2,13,14,17,24				1,3,9,12,19,20,21	11	15	16	18		22	23		
Central Coastal Area																											
San Luis Obispo County Flood Control and Water Conservation District	2	3	4	5	3	1	2				6		1	2,8,13						7	9		10		11	12	
Santa Barbara County Flood Control and Water Conservation District	2	3	4	5	3	1	2				6		1	2,7,13				2,9			8		10		11	12	
Southern California Area																											
Antelope Valley-East Kern Water Agency	1	5	6	7	5	1					8		1	10,18		3	2	1,14	4	9	12	2,3,4	13	15	16	17	
Castaic Lake Water Agency	2	4	5	6	4	1	2				7		1	2,10,15		2		2,3,9		8	11	16	12		13	14	
Coachella Valley Water District	2	3	4	6	3	1	2				6		1	2,8,13,15				2		7	9		10	11	12		
Crestline-Lake Arrowhead Water Agency	2	5	6	7	5	1	2				8		1	2,11,16	4	3		2,10		9	12		13		14	15	
Desert Water Agency	2	3	4	5	3	1	2				6		1	2,8,13,15				2		7	9		10	11	12	11	
Little Rock Creek Irrigation District	2	3	4	5	3	1	2				6		1	2,7,12				2		8			9	10	10		
Metropolitan Water District of Southern California (MWD)	1	9	10	11	9	1					13		1	16,23,24				1,3,8,15	2,6,7	14	17	(c)	18	19,21	20	22	
Mojave Water Agency	2	4	5	6	4	1	2				7		1	2,16			3	2,10,12		8	9	3	11	13	14	15	
Palmdale Water District	2	3	4	5	3	1	2				6		1	2,8,14				2		7	9		10	11	12	13	
San Bernardino Valley Municipal Water District	2	4	5	8	4	1	2				7		1	2				1,2,3,9		8	10		11	12	13	14	
San Gabriel Valley Municipal Water District	2	4	5	6	4	1	2				7		1	2,10,15		2		2,9	3	8	11		12	13	14		
San Geronimo Pass Water Agency	2	4	5	6	4	1	2				7		1	2,12		2				8		2,3	9	10	11		
Ventura County Flood Control District	1	2	3	4	2		1				5			1,7						6	8		9	10	11		

a) Contract issues covered by these amendments are (1) repayment of off-aqueduct power facility costs; (2) delinquency penalties; and (3) authority to include other types of projects as additional conservation facilities.

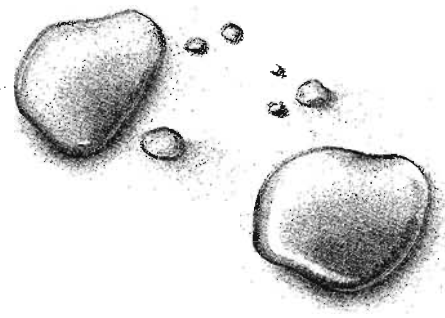
b) S indicates special provisions of the basic contract.

c) MWD special conditions are covered by amendments 2, 3, 4, 5, 7, 8V (voided), and 12.





## 5. *Delivering Water*



**W**ATER IS DELIVERED BY THE STATE Water Project (SWP) for a wide variety of beneficial uses. In addition to delivering entitlement water to long-term water supply contractors, SWP:

- Transports water to other public agencies through exchanges or purchases
- Provides water for wildlife and recreational uses
- Conveys water to meet local water rights agreements

In 1990 a total of 3,900,066 acre-feet of water was conveyed to 27 long-term contractors and 22 other agencies. That amount includes the following deliveries:

- 2,582,151 acre-feet of entitlement and entitlement-related water to long-term contractors
- 1,317,915 acre-feet of nonentitlement water to satisfy agreements made with local and federal agencies, including the Central Valley Project (CVP)<sup>1</sup>

Specific information about water deliveries made during various time periods to long-term contractors and other agencies has been organized

into the following three sections, each with a corresponding table located at the end of this chapter:

1. Total amounts of water delivered and credits given to long-term contractors in 1990 (Table 11)
2. Total amounts of water delivered in 1990, by month (Table 12)
3. Total amounts of entitlement and other water conveyed from 1962 through 1990 (Table 13)

Information about each section follows.

### *Water Deliveries and Credits*

Information about the total amounts of water delivered and entitlement credits granted to long-term contractors in 1990 is included in Table 11, "Total Amounts of Water Delivered and Credits Granted to Long-Term Contractors in 1990, by Service Area."

Information about specific columns included in the table follows. The information is arranged according to column numbers.

#### *Other Water Deliveries*

Column 4 includes amounts of nonproject water delivered through SWP facilities. An example of nonproject water is water purchased by SWP from another agency for SWP contractors.

IN 1990  
THE STATE  
WATER  
PROJECT  
CONVEYED  
ABOUT 3.9  
MILLION ACRE-  
FEET OF WATER :  
2.6 MILLION  
ACRE-FEET  
TO 27  
LONG-TERM  
CONTRACTORS  
AND  
1.3 MILLION  
ACRE-FEET  
TO 22 OTHER  
AGENCIES.

<sup>1</sup>Entitlement water is defined as the amount of water long-term contractors may request each year as part of Article 12(a), "Procedure for Determining Water Delivery Schedule," of their water supply contract. Surplus water delivered in 1990 consisted of unscheduled water; that is, water available only for very short time periods when excess water and SWP pumping capacity are available in the Delta.

### ***Make-up Water***

Make-up water is allocated to contractors according to Article 12(d) and Article 14(b) of the long-term water supply contracts.

According to Article 12(d) if, for some reason beyond the Department of Water Resources' control, water is not available for delivery according to the established schedule for that year, the water may be delivered at a later date.

Article 14(b) of the long-term water supply contracts provides for the delivery of water at a later time if water is not delivered due to necessary investigations, inspections, maintenance, repairs, or replacement of SWP facilities.

No make-up water according to 14(b) was delivered in 1990. Column 6 includes amounts allocated in previous years.

### ***Wet-Weather Water***

No additional credits for wet-weather water were acquired during 1990. Column 7 includes amounts of credits acquired in previous years.

### ***Carry-Over Water Approved for Delivery***

For several years the Department has offered interested contractors the opportunity to carry over a portion of their approved entitlement to the next year.

Those programs were designed to encourage the most effective use of water and to avoid obligating the contractors to use or lose the water by December 31.

Because operational constraints may change from year to year, an agreement in which the conditions of the approval are listed is signed each year with participating contractors.

Contractors were informed by the Department of its willingness to consider requests to carry over 1990 entitlement water to January, February, and March 1991 in *Water Service Contractors Council Memorandum Number 1988*. Because of the

unusual conditions in 1991, the carry-over program was extended to September 30, 1991.

Column 8 includes amounts of water carried over approved for delivery in 1991. The total amount of 1990 entitlement water carried over for delivery in 1991 was about 28,000 acre-feet.

### ***Reduction Credits***

Column 10, "Future Entitlement Reduction Credits per Articles 7 or 45," includes amounts of reduction credits for wet-weather water.

According to provisions of their water supply contract, South Bay and San Joaquin Valley contractors may reduce entitlement water deliveries in years in which above-average amounts of local water are available and increase deliveries by an equal amount in later years.

### ***Total Amounts Delivered in 1990***

During 1990, SWP provided water service to 49 agencies, including 27 long-term water contractors. The names of those agencies and amounts of water delivered to them by month may be found in Table 12, "Total Amounts of Water Delivered in 1990, by Month."

A summary of water deliveries is included in this section. Information is arranged alphabetically according to water type or purpose.

### ***Central Valley Project Water***

During 1990, the Department negotiated several agreements for conveying CVP water through SWP facilities. According to terms of annual conveyance agreements, a total of 2,006 acre-feet of CVP water was delivered to four contractors: 12 acre-feet to Musco Olive Products, Inc.; 164 acre-feet to Green Valley Water District; 6 acre-feet to Tracy Golf and Country Club; and 1,824 acre-feet to Cawelo Water District. According to terms of a separate agreement, 20 acre-feet was conveyed to the Veterans Administration Cemetery.

Water conveyed according to the three-party Cross Valley Canal contracts totaled 66,570 acre-feet, including 5,300 acre-feet belonging to Kern-Tulare Water District, which was transferred to Westlands Water District, and 100 acre-feet belonging to Pixley Irrigation District, which was transferred to Westlands Water District.

A total of 3,000 acre-feet of the water conveyed was delivered to the Cross Valley Canal contractors from the Department's share of stored water in the San Luis Reservoir. The U.S. Bureau of Reclamation (USBR) replaced the 3,000 acre-feet of water in September 1990.

According to terms of the coordinated operating agreement with USBR, the Department conveyed 142,645 acre-feet of water from the Delta to O'Neill Forebay to replace water foregone by USBR during May and June 1990 due to pumping limitations imposed as a result of the State Water Resources Control Board's Decision 1485.

A total of 6,200 acre-feet of CVP water was conveyed according to terms of another agreement for the U.S. Fish and Wildlife Service to the Buena Vista Water Storage District turnout for delivery to the Kern National Wildlife Refuge.

### ***Entitlement Water***

A total of 2,582,151 acre-feet of entitlement water was delivered during 1990 to 27 long-term contractors, including 2,453,605 acre-feet of 1990 entitlement water and 128,546 acre-feet of 1989 carryover entitlement water.

Twenty-two contractors took delivery of less entitlement water than they originally requested; three SWP contractors took delivery of their entire contract entitlements.

### ***Nonproject Water***

During 1990, the city of San Francisco took delivery of 250 acre-feet of water from the Placer County Water Agency and 82 acre-feet from the Modesto Irrigation District. Also, a three-party agreement dated September 20, 1990, provided for delivering up to 15,000 acre-feet of water from

Oroville-Wyandotte Irrigation District to Westlands Water District. As of June 30, 1991, 7,000 acre-feet of water had been delivered to Westlands.

### ***Predeliveries of Entitlement Water***

During 1990, 150,000 acre-feet of entitlement water was delivered to Kern County Water Agency for storage in the Kern County groundwater basin (see "Kern Water Bank" in Chapter 15 for additional information).

### ***Recreation, Fish, and Wildlife Water***

A total of 9,262 acre-feet of SWP water and 182 acre-feet of CVP water was conveyed for recreational use and fish and wildlife enhancement as follows:

- 1,836 acre-feet was delivered for public recreational facilities at Lake Del Valle, San Luis Reservoir, O'Neill Forebay, Silverwood Lake, Pyramid Lake, Castaic Lake, and Lake Perris.
- 4,018 acre-feet was released to maintain a trout fishery in Piru Creek as a condition of obtaining a license from the Federal Energy Regulatory Commission to develop a power plant at Pyramid Lake.
- 3,263 acre-feet was conveyed for replacing water losses at Castaic Lagoon, an impoundment downstream from Castaic Lake devoted entirely to recreational uses.
- 145 acre-feet was delivered for use in managing wildlife on the Pilibos Wildlife Area, 40 miles south of Los Banos, and on about 770 acres of land near O'Neill Forebay.

### ***Regulated Deliveries of Local Supply***

Water in this category is transported through SWP facilities to long-term SWP contractors and other agencies according to terms of various local water rights agreements. Some of this water simply passes through SWP transportation facilities, and some is stored in SWP reservoirs for release at a later time.

In 1990 a total of 869,283 acre-feet of water in this category was delivered as follows: 868,219 acre-feet to five nonproject agencies in the Feather River Area; 941 acre-feet to Alameda County Flood Control and Water Conservation District, Zone 7, in the South Bay Area; and 123 acre-feet to Crestline-Lake Arrowhead Water Agency in the Southern California Area. Also, 748 acre-feet of nonproject water was conveyed to the city of Vallejo's delivery structure.

### ***Transfers of Entitlement Water***

During 1990, entitlement water was transferred as follows: 200 acre-feet of Santa Clara's entitlement water to Oak Flat Water District; 161 acre-feet of Kern County Water Agency's entitlement water to Dudley Ridge Water District; and 200 acre-feet of Tulare Lake Basin Water Storage District's entitlement water to Dudley Ridge Water District and 1,500 acre-feet to Westlands Water District.

The Department approved the transfers as drought-related measures.

### ***Yuba County Water Agency Purchases***

A total of 6,373 acre-feet of water purchased by the city of Napa from Yuba County Water Agency (YCWA) was delivered for the city to Napa County Flood Control and Water Conservation District; 62,204 acre-feet of water purchased by the Department from YCWA was delivered through SWP facilities, including 28,962 acre-feet to Santa Clara Valley Water Agency and 33,242 acre-feet to Tulare Lake Basin Water Storage District, of which 2,031 acre-feet was conveyed to Empire West Side Irrigation District.

### ***Total Amounts Delivered Since 1962***

Information about the total amount of annual entitlements and water conveyed by type during the 29 years the project has been operating is contained in Table 13, "Total Amounts of Annual Entitle-

ments and Water Conveyed, by Type, 1962 Through 1990." Specific information about entitlements and water conveyed, arranged according to column numbers, follows.

### ***Annual Entitlements***

Columns 1 through 7 include the amounts of each contractor's entitlement water for years 1962 through 1990 as specified in the entitlement schedules (Table A) of the long-term water supply contracts. In some instances those schedules, projections of each contractor's need for water to 2035, have been amended.

For the amounts of entitlement water each contractor may request for years 1962 through 2035, see Table B-4, "Annual Entitlements to Project Water," in Appendix B.

### ***Entitlement Water Conveyed***

Column 8 includes amounts of entitlement water delivered in 1990. In 1990 entitlement water delivered to 27 contractors totaled 2,582,151 acre-feet. That amount includes 2,061 acre-feet of 1990 transfer entitlement water (entitlement water delivered to another contractor) and 128,546 acre-feet of 1989 carry-over entitlement water (entitlement water carried over from 1989 and delivered in 1990).

Chapter 14, "Forecasting Water Delivery Capabilities," includes information about the Department's procedure for determining amounts of water to be delivered.

### ***Surplus and Unscheduled Water***

Column 9 includes amounts of surplus and unscheduled water delivered during the year. During 1990, surplus water, which is water in excess of that required to meet all demands for entitlement water—water to be stored in reservoirs and water to meet other SWP requirements, for example—was not available.

Oak Flat Water District received 90 acre-feet of unscheduled water or water available for only a

short period when excess water and SWP pumping capabilities were available in the Delta.

### ***Other Water***

Column 10 includes amounts of water classified as *other water* delivered in 1990. In 1990 a total of 457,316 acre-feet of water classified as *other water* was delivered. That classification includes CVP water conveyed through SWP facilities; regulated delivery of local supply, except Feather River diversions; and purchased, emergency relief, and preconsolidation repayment water except for water delivered to the Joint Water Districts Board and Western Canal Water District.

### ***Initial Fill Water***

The quantities listed in Column 13 represent the amounts used to initially fill to maximum operational capacities the aqueducts and reservoirs south of the Delta.

Initial filling began in 1962 with the filling of the South Bay Aqueduct and was completed in 1979 when Lake Perris reached its maximum operational capacity.

### ***Operational Losses***

Column 14 includes amounts of water lost to evaporation and seepage from SWP's aqueducts and reservoirs south of the Delta. In 1990 that amount totaled 528,869 acre-feet.

Figures listed in Column 14 have been adjusted to account for changes in the amounts stored in reservoirs and for amounts of inflow from local drainage areas, including inflows from the Kern River Intertie and the First Los Angeles Aqueduct.

Negative values are indicated for years in which withdrawals of water from reservoirs south of the Delta exceeded additions of water.

### ***Recreation Water***

Column 15 includes the amount of water conveyed for recreational use or to provide water or improve water quality for fish and wildlife. In 1990 a total of 9,262 acre-feet of recreation water was conveyed.

TABLE 11

**Total Amounts of Water Delivered and Credits Granted to Long-Term Contractors in 1990, by Service Area  
(Acre-feet)**

Long-Term Water Supply Contractor	Water Deliveries in 1990					Future Entitlement Credits as of January 1, 1991				Future Entitlement Reduction Credit Per Articles 7 or 45 (10)
	Entitlement Water Deliveries			Other Water Deliveries (a, b (4)	Total Deliveries (5)	Make-Up Water Per Articles 12(d) or 14(b) (c (6)	Wet-Weather Water Per Articles 7 or 45 (7)	1990 Carryover Approved for Delivery in 1991 (8)	Total Delivery Credit (9)	
	1990 Entitlement (1)	1989 Entitlement Delivered During 1990 (2)	Total Entitlement (3)							
Upper Feather River Area										
City of Yuba City	494		494		494					
County of Butte	380		380		380					
Plumas County Flood Control and Water Conservation District	548		548		548					
North Bay Area										
Solano County Water Agency	19,131		19,131	748 (d	19,879			1,750	1,750	
Napa County Flood Control and Water Conservation District	6,940		6,940	6,373 (e	13,313					
South Bay Area										
Alameda County Flood Control and Water Conservation District, Zone 7	33,034		33,034	941 (f	33,975	2,930	111,580		114,510	
Alameda County Water District	29,615	2,088	31,703		31,703	2,451	172,088	2,645	177,184	
Santa Clara Valley Water District	91,800		91,800	28,962	120,762					
San Joaquin Valley Area										
County of Kings	2,000		2,000		2,000	880			880	
Devil's Den Water District	6,340	100	6,440		6,440	2,794		10	2,804	
Dudley Ridge Water District	28,284 (g	8,373	36,657		36,657	12,694		927	13,621	
Empire West Side Irrigation District	1,279		1,279	2,031	3,310	660		221	881	
Kern County Water Agency	627,374	84,913	712,287	150,000 (h	862,287	224,115		8,965	233,080	
Oak Flat Water District	3,050 (i	72	3,122	90 (j	3,212	1,254			1,254	2,466
Tulare Lake Basin Water Storage District	56,870 (k		56,870	31,211	88,081	26,070		2,180	28,250	
Central Coastal Area										
San Luis Obispo County Flood Control and Water Conservation District	0		0		0					
Santa Barbara County Flood Control and Water Conservation District	0		0		0			383	383	
Southern California Area										
Antelope Valley-East Kern Water Agency	47,206		47,206		47,206	18,368 (l			18,368	
Castaic Lake Water Agency	22,139		22,139		22,139	500			500	
Coachella Valley Water District	23,100		23,100		23,100					
Crestline-Lake Arrowhead Water Agency	1,827		1,827	123 (m	1,950	151			151	
Desert Water Agency	38,100		38,100		38,100					
Little Rock Creek Irrigation District	1,747		1,747		1,747	566			566	
Metropolitan Water District of Southern California	1,363,423	33,000	1,396,423		1,396,423	102,239		10,377	112,616	
Mojave Water Agency	0		0		0	44,364			44,364	
Palmdale Water District	8,608		8,608		8,608					
San Bernardino Valley Municipal Water District	18,831		18,831		18,831	4,269			4,269	
San Gabriel Valley Water District	16,649		16,649		16,649	1,000			1,000	
Ventura County Flood Control District	4,836		4,836		4,836			614	614	
Total	2,453,605	128,546	2,582,151	220,479	2,802,630	445,305	283,668	28,072	757,045	2,466

a) Includes amounts of deliveries of water rights water through SWP facilities not included in previous issues of Bulletin 132.

b) Includes amounts of Yuba County Water Agency water purchased by the Department for Santa Clara Valley Water District, Empire West Side Irrigation District, and Tulare Lake Basin Water Storage District.

c) Credits for all contractors are made according to Article 12(d) of water supply contracts unless otherwise stated.

d) Amount of Vallejo permit water right water delivered through SWP facilities.

e) Amount of Yuba County Water Agency water purchased by Napa County Flood Control and Water Conservation District and wheeled through SWP facilities.

f) Amount of local water right water delivered through SWP facilities.

g) Includes 200 and 161 acre-feet of entitlement water transferred from Tulare Lake Basin Water Storage District and Kern County Water Agency.

h) Amount of 1990 Ground Water Demonstration Program water.

i) Includes 200 acre-feet of entitlement water transferred from Santa Clara Valley Water District.

j) Amount of unscheduled water delivered in 1990.

k) Includes 1,500 acre-feet of water transferred to Westlands Water District.

l) Antelope Valley-East Kern Water Agency future entitlement credits total 4,787 acre-feet under Article 14(b) and 13,581 acre-feet under Article 12(d).

m) Amount of local water rights water delivered through SWP facilities.



**TABLE 12**  
**Total Amounts of Water Delivered in 1990, by Month**  
**(Acre-feet)**

Contracting Agency and Type of Service	Month												1990 Total Deliveries	1990 Contract Entitlement	1990 Entitlement Not Delivered	Net Cumulative Entitlement Not Delivered Through (a)	
																1989	1990
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.					
<b>Feather River Area</b>																	
City of Yuba City																	
Entitlement Water	0	0	0	0	0	0	265	229	0	0	0	0	494	3,800	3,306	12,808	16,114
County of Butte																	
Entitlement Water	27	66	172	17	19	5	9	9	19	0	6	31	380	1,200	820	16,086	16,906
Plumas County Flood Control and Water Conservation District																	
Entitlement Water	12	16	5	26	54	81	105	96	61	32	23	35	548	1,040	492	7,156	7,648
Last Chance Creek Water District																	
Regulated Delivery of Local Supply	0	0	0	0	2,495	1,442	1,743	710	432	186	38	0	7,046				
Thermalito Irrigation District																	
Regulated Delivery of Local Supply	87	82	108	179	207	268	318	302	251	225	128	117	2,272				
Oroville-Wyandotte Irrigation District																	
Regulated Delivery of Local Supply	205	58	81	646	849	817	1,010	1,100	1,170	1,070	422	226	7,654				
Transferred Local Water																	
(2,000 AF to Westlands WD)	0	0	0	0	0	0	0	0	2,000	0	0	0	2,000				
Agency Total (Excludes transferred water)	205	58	81	646	849	817	1,010	1,100	1,170	1,070	422	226	7,654				
Western Canal Water District																	
Regulated Delivery of Local Supply	1,088	0	0	14,204	48,664	44,214	56,512	42,646	8,966	13,800	11,264	8,150	249,508				
Joint Water Districts Board																	
Regulated Delivery of Local Supply	1,949	0	1,100	60,390	98,480	98,590	119,890	103,830	42,820	35,690	21,390	17,610	601,739				
SWP	39	82	177	43	73	86	379	336	80	32	29	66	1,422	6,040	4,618	36,050	40,668
Non-SWP	3,329	140	1,289	75,419	150,695	145,331	179,473	148,588	53,639	50,971	33,242	26,103	868,219	0	0	0	0
Area Total	3,368	222	1,466	75,462	150,768	145,417	179,852	150,024	56,889	52,073	33,693	26,395	879,295	6,040	4,618	36,050	40,668
<b>North Bay Area</b>																	
Napa County Flood Control and Water Conservation District																	
Entitlement Water	751	519	844	969	631	208	260	250	249	395	993	871	6,940	6,745	0	353	353
Yuba County Water Agency (YCWA) Water via SWP Facilities	0	0	0	0	608	1,145	1,250	1,293	1,090	987	0	0	6,373				
Agency Total	751	519	844	969	1,239	1,353	1,510	1,543	1,339	1,382	993	871	13,313				
Solano County Water Agency																	
Entitlement Water	861	609	608	949	936	1,961	2,088	2,304	2,401	1,866	2,806	1,742	19,131	21,250	2,119	3,514	5,633
Vallejo Permit Water	0	64	108	318	258	0	0	0	0	0	0	0	748				
Agency Total	861	673	716	1,267	1,194	1,961	2,088	2,304	2,401	1,866	2,806	1,742	19,879				
SWP	1,612	1,128	1,452	1,918	1,567	2,169	2,348	2,554	2,650	2,261	3,799	2,613	26,071	27,995	2,119	3,867	5,986
Non-SWP	0	64	108	318	866	1,145	1,250	1,293	1,090	987	0	0	7,121	0	0	0	0
Area Total	1,612	1,192	1,560	2,236	2,433	3,314	3,598	3,847	3,740	3,248	3,799	2,613	33,192	27,995	2,119	3,867	5,986
<b>South Bay Area</b>																	
Alameda County Flood Control and Water Conservation District, Zone 7																	
Entitlement Water	1,442	928	2,253	3,036	3,133	3,268	3,558	3,662	3,073	3,083	2,901	2,697	33,034	32,000	(1,034)	165,389	164,355
Regulated Delivery of Local Supply	90	484	148	0	0	0	0	0	0	0	20	199	941				
Agency Total	1,532	1,412	2,401	3,036	3,133	3,268	3,558	3,662	3,073	3,083	2,921	2,896	33,975				
Alameda County Water District																	
Entitlement Water	2,008	1,162	1,458	3,090	1,889	1,521	3,184	3,325	2,922	1,666	3,760	3,630	29,615	36,900	7,285	271,468	276,665 (b)
Carryover Entitlement Water	88	500	1,500	0	0	0	0	0	0	0	0	0	2,088				
Agency Total	2,096	1,662	2,958	3,090	1,889	1,521	3,184	3,325	2,922	1,666	3,760	3,630	31,703				
Santa Clara Valley Water District																	
Entitlement Water	0	0	0	9,885	10,354	10,943	10,986	10,722	11,042	10,571	10,883	6,414	91,800	92,000	0 (c)	40,821	40,821
DWR YCWA Water	7,891	7,736	10,017	0	550	0	0	0	0	0	0	0	28,962				
Transferred Entitlement Water	0	0	0	0	0	0	0	8	160	32	0	0	200				
(200 AF to Oak Flat WD)	0	0	0	0	0	0	0	0	0	0	0	0	0				
Agency Total (Excludes transferred entitlement water)	7,891	7,736	10,017	9,885	10,904	10,943	10,986	10,722	11,042	10,571	10,883	9,182	120,762				
San Francisco																	
Placer County Water Agency (PCWA) Water via SWP Facilities	0	0	0	0	0	0	0	0	0	0	0	250	250				
Modesto Irrigation District (MID) Water via SWP Facilities	0	0	0	0	0	0	0	0	0	0	0	82	82				
Agency Total	0	0	0	0	0	0	0	0	0	0	0	332	332				
Recreation/Fish and Wildlife Water	7	6	6	7	19	10	23	24	21	24	15	6	168				
SWP	3,545	2,596	5,217	16,018	15,395	15,742	17,751	17,733	17,058	15,344	17,559	12,747	156,705	160,900	6,251	477,678	481,841
Non-SWP	7,981	8,220	10,165	0	550	0	0	0	0	0	20	3,299	30,235	0	0	0	0
Area Total	11,526	10,816	15,382	16,018	15,945	15,742	17,751	17,733	17,058	15,344	17,579	16,046	186,940	160,900	6,251	477,676	481,841
<b>San Joaquin Valley Area</b>																	
<b>SWP Water</b>																	
County of Kings																	
Entitlement Water	400	400	400	0	0	400	200	200	0	0	0	0	2,000	4,000	2,000	0	2,000
Devil's Den Water District																	
Entitlement Water	0	961	2,448	602	229	777	1,250	0	0	0	0	55	5,340	12,700	6,460	226	6,488 (b)
Carryover Entitlement Water	0	0	100	0	0	0	0	0	0	0	0	0	100				
Agency Total	0	961	2,548	602	229	777	1,250	0	0	0	0	55	6,440				
Dudley Ridge Water District																	
Entitlement Water	0	0	255	1,982	5,308	5,894	3,377	4,027	410	801	80	189	27,923	57,700	29,777	9,169	30,573 (b)
Entitlement Water Transferred From																	
Tulare Lake Basin Water Storage District	0	0	0	0	0	0	0	200	0	0	0	0	200				
Entitlement Water Transferred From																	
Kern County Water Agency	0	0	0	0	0	0	0	0	0	122	0	39	161				
Carryover Entitlement Water	1,759	3,224	3,390	0	0	0	0	0	0	0	0	0	8,373				
Agency Total	1,759	3,224	3,645	1,982	5,308	5,894	8,977	4,227	410	923	80	228	36,657				
Empire West Side Irrigation District																	
Entitlement Water	0	0	0	0	0	113	886	280	0	0	0	0	1,279	3,000	1,721	12,023	13,744
DWR YCWA Water Transferred From Tulare Lake Basin Water Storage District (TLBWS)	888	432	0	0	0	711	0	0	0	0	0	0	2,041				
Agency Total	888	432	0	0	0	824	886	280	0	0	0	0	3,310				

a) These columns include amounts of entitlement not delivered, deferred or otherwise, regardless whether water contractor received remuneration.

b) Reflects amounts of 1989 carry-over entitlement water delivered in 1990

c) Reflects amounts of transfer entitlement water delivered in 1990

TABLE 12  
Total Amounts of Water Delivered in 1990, by Month (Continued)  
(Acre-feet)

Contracting Agency and Type of Service	Month												1990 Total Deliveries	1990 Contract Entitlement	1990 Entitlement Not Delivered	Net Cumulative Entitlement Not Delivered Through (a)	
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.				1989	1990
<b>San Joaquin Valley Area (cont.)</b>																	
Kern County Water Agency																	
Entitlement Water	2,777	10,556	22,163	46,609	70,828	113,300	139,857	119,639	29,861	26,663	16,209	28,852	627,374	1,153,400	526,026	412,169	853,121 (b)
Carryover Entitlement Water	13,579	31,358	39,576	0	0	0	0	0	0	0	0	0	84,513	0	0	0	0
Transferred Entitlement Water (To Dudley Ridge Water District)	0	0	0	0	0	0	0	0	0	122	0	39	161	0	0	0	0
Agency Total (Excludes transferred entitlement water to Dudley Ridge WD)	16,456	41,914	62,039	46,609	70,828	113,300	139,857	119,639	29,861	26,663	16,209	28,852	712,048	1,153,400	526,026	412,169	853,121 (b)
Oak Flat Water District																	
Entitlement Water	20	2	136	674	532	720	530	225	0	0	0	0	2,850	5,700	2,850	712	3,490 (b)
Carryover Entitlement Water	72	0	0	0	0	0	0	0	0	0	0	0	72	0	0	0	0
Transfer Entitlement Water from Santa Clara Valley Water District (SCVWD)	0	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0
Unscheduled Water	0	0	0	0	4	86	0	0	0	0	0	0	90	0	0	0	0
Agency Total	92	2	136	674	536	806	530	224	0	32	0	0	3,012	5,700	2,850	712	3,490 (b)
Tulare Lake Basin Water Storage District																	
Entitlement Water	0	0	0	0	0	14,580	21,124	5,748	0	0	9,631	4,287	35,370	118,500	61,430 (c)	80,662	142,092 (b)
Transferred Entitlement Water (To Dudley Ridge Water District)	0	0	0	0	0	0	0	0	0	0	0	0	200	0	0	0	0
Transferred Entitlement Water (to Westlands Water District)	0	0	0	0	0	0	0	1,500	0	0	0	0	1,500	0	0	0	0
DWR YCWA Water (2031 AF transferred to Empire West Side ID)	5,819	7,367	6,555	3,027	3,920	4,723	0	0	0	0	0	0	31,211	0	0	0	0
Agency Total (Excludes transfer water to other agencies)	888	432	0	0	0	711	0	0	0	0	0	0	2,031	0	0	0	0
Westlands Water District																	
Entitlement Water Transferred from TLBWSD	0	0	0	0	0	0	0	1,500	0	0	0	0	1,500	0	0	0	0
Transferred Local Water from Oroville-Wyandotte ID	0	0	0	0	0	0	0	2,000	0	0	0	0	2,000	0	0	0	0
Agency Total	0	0	0	0	0	0	0	3,500	0	0	0	0	3,500	0	0	0	0
Demonstration Program Water	4,773	19,725	16,442	11,718	13,381	19,964	40,132	5,115	5,000	3,739	0	2	160,000	0	0	0	0
Parks and Recreation	1	0	3	10	6	11	10	15	5	8	0	1	70	0	0	0	0
Recreation/Fish and Wildlife Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fish and Game	22	1	17	11	13	5	11	49	14	2	0	0	145	0	0	0	0
Recreation/Fish and Wildlife Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SWP	23,503	66,247	85,228	61,608	90,301	155,850	221,977	137,077	36,459	31,367	25,920	33,425	968,960	1,355,000	630,000	514,963	0
Non-SWP	6,507	7,799	6,555	3,027	3,920	5,434	0	0	0	0	0	0	35,242	0	0	0	0
Area Subtotal (SWP Water)	30,010	74,046	91,783	64,633	94,221	161,284	221,977	137,077	36,459	31,367	25,920	33,425	1,004,202	1,355,000	630,000	514,963	0
<b>San Joaquin Valley Area</b>																	
<b>CVP Water Conveyed</b>																	
Annual Contracts																	
Green Valley Water District	42	122	0	0	0	0	0	0	0	0	0	0	164	0	0	0	0
Kings County Water District	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakeside Irrigation Water District	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Musco Olive Products, Inc.	0	0	0	0	0	0	0	0	0	0	7	2	12	0	0	0	0
Tracy Golf and Country Club	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cawelo Water District	1,410	375	0	0	0	0	0	0	0	0	0	0	1,824	0	0	0	0
V A Cemetery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,491	503	0	0	0	0	0	0	0	0	7	2	2,000	0	0	0	0
Cross Valley Canal Contracts																	
Fresno County	0	0	116	237	232	264	324	327	0	0	0	0	1,590	0	0	0	0
Lower Tule River Irrigation District	0	0	1,203	2,462	2,403	2,736	3,359	3,358	0	0	0	0	15,551	0	0	0	0
Pexley Irrigation District	0	0	1,203	2,462	2,403	2,736	3,359	3,358	0	0	0	0	15,551	0	0	0	0
100 AF transferred to Westlands WD	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
Agency Total (Excludes 100 AF transferred to Westlands WD)	0	0	1,203	2,462	2,403	2,736	3,359	3,358	0	0	0	0	18,451	0	0	0	0
Rag Gulch Water District	0	0	1,515	1,053	1,028	1,170	2,442	442	0	0	0	0	8,650	0	0	0	0
Tulare County	0	0	205	420	410	467	571	571	0	0	0	0	2,270	0	0	0	0
Kern-Tulare Water District	163	2,965	2,932	3,685	2,067	1,929	227	22	0	0	0	0	14,700	0	0	0	0
5,300 AF transferred to Westlands WD	0	0	0	0	0	0	0	2,000	0	0	3,300	0	13,300	0	0	0	0
Agency Total (Excludes 5,300 AF transferred to Westlands WD)	163	2,965	2,932	3,685	2,067	1,929	937	22	0	0	0	0	14,700	0	0	0	0
Hills Valley Irrigation District	50	1,754	1,29	265	259	294	362	364	0	0	0	0	3,477	0	0	0	0
Tri-Valley Water District	0	0	44	90	88	101	123	125	0	0	0	0	571	0	0	0	0
Subtotal	213	5,335	1,347	10,674	8,890	9,697	11,471	8,535	0	0	0	0	61,170	0	0	0	0
USBR																	
Federal Wheeling (U.S. Fish & Wildlife)	0	0	0	0	0	0	0	0	0	3,055	2,146	990	13,200	0	0	0	0
Decision 1485 Water	0	0	0	0	0	0	0	0	0	12,000	20,778	28,778	42,645	0	0	0	0
Subtotal	0	0	0	0	0	0	0	0	0	15,055	22,924	29,778	55,845	0	0	0	0
Westlands Water District																	
Transferred from Pexley ID	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
Transferred from Kern-Tulare WD	0	0	0	0	0	0	0	2,500	0	0	3,300	0	13,300	0	0	0	0
Agency Total	0	0	0	0	0	0	0	2,500	0	0	3,300	100	13,300	0	0	0	0
Recreation/Fish and Wildlife Water	19	0	20	15	16	13	11	52	17	9	0	0	182	0	0	0	0
Non-SWP	1,723	15,838	13,367	10,689	8,908	9,710	11,498	10,592	12,027	64,157	26,234	29,880	217,623	0	0	0	0
Area Subtotal (CVP Water)	1,723	15,838	13,367	10,689	8,908	9,710	11,498	10,592	12,027	64,157	26,234	29,880	217,623	0	0	0	0
<b>Area Summary</b>																	
SWP	23,503	66,247	85,228	61,608	90,301	155,850	221,977	137,077	36,459	31,367	25,920	33,425	968,960	1,355,000	630,000	514,963	0
Non-SWP	8,230	13,637	12,922	13,716	12,828	15,144	11,498	10,592	14,027	64,157	26,234	29,880	252,865	0	0	0	0
Total	31,733	79,884	98,150	75,322	103,129	170,994	233,475	147,669	50,486	95,524	52,154	63,305	1,221,825	1,355,000	630,000	514,963	0

a) Includes amounts of 1989 entitlement not delivered, deferred or otherwise, regardless whether water contractor received remuneration

b) Reflects amounts of 1989 carry-over entitlement water delivered in 1990.

c) Reflects amounts of 1989 transfer entitlement water delivered in 1990.

TABLE 12  
Total Amounts of Water Delivered in 1990, by Month (Continued)  
(Acre-feet)

Contracting Agency and Type of Service	Month												1990 Total Deliveries	1990 Contract Entitlement	1990 Entitlement Not Delivered	Net Cumulative Entitlement Not Delivered Through (a)	
	Month															1989	1990
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.					
<b>Central Coastal Area</b>																	
San Luis Obispo County Flood Control and Water Conservation District Entitlement Water		0	0	0	0	0	0	0	0	0	0	0	0	25,000	25,000	77,000	102,000
Santa Barbara County Flood Control and Water Conservation District Entitlement Water		0	0	0	0	0	0	0	0	0	0	0	0	45,486	45,486	139,138	184,624
Area Total		0	0	0	0	0	0	0	0	0	0	0	0	70,486	70,486	216,138	286,624
<b>Southern California Area</b>																	
Antelope Valley-East Kern Water Agency Entitlement Water	1,204	1,428	3,091	3,788	4,528	5,182	7,172	6,677	5,472	4,051	2,580	2,033	47,206	132,100	84,894	366,229	451,123
Castaic Lake Water Agency Entitlement Water	1,357	1,039	1,665	1,606	1,915	2,246	2,444	2,456	2,387	2,347	1,230	1,447	22,139	39,300	17,161	224,170	241,331
Coachella Valley Water District Entitlement Water	0	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	23,100	23,100	0	5,200	5,200
Crestline-Lake Arrowhead Water Agency Entitlement Water	151	52	144	96	129	138	204	215	196	169	172	161	1,827	5,800	3,973	32,917	36,890
Regulated Delivery of Local Supply Agency Total	0	114	9	0	0	138	0	0	196	169	0	0	123	0	0	0	0
Desert Water Agency Entitlement Water	151	166	153	96	129	138	204	215	196	169	172	161	1,950	5,800	3,973	32,917	36,890
Little Rock Creek Irrigation District Entitlement Water	0	3,464	3,464	3,464	3,464	3,464	3,464	3,464	3,464	3,464	3,464	3,460	38,100	38,100	0	8,000	8,000
Metropolitan Water District of Southern California Entitlement Water	0	59	148	182	196	201	244	199	153	139	60	166	1,747	2,300	553	14,851	15,404
Carryover Entitlement Water Agency Total	46,654	55,020	116,232	110,106	128,596	101,543	141,830	138,051	134,476	144,591	132,354	113,970	1,363,423	2,011,500	648,077	9,591,830	10,206,907 (b)
Mojave Water Agency Entitlement Water	17,000	18,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Palmdale Water District Entitlement Water	63,654	71,020	116,232	110,106	128,596	101,543	141,830	138,051	134,476	144,591	132,354	113,970	1,396,423	50,800	50,800	450,368	501,168
San Bernardino Valley Municipal Water District Entitlement Water	0	0	0	0	0	0	0	0	0	0	0	0	0	17,300	17,300	114,000	131,300
San Gabriel Valley Municipal Water District Entitlement Water	4	1,348	550	535	738	868	1,254	1,529	1,308	82	160	232	8,608	17,300	8,692	167,108	175,800
San Geronimo Pass Water Agency Entitlement Water	3	1	2	996	1,827	3,108	3,170	2,627	1,898	1,496	1,710	1,993	18,831	101,500	82,669	958,617	1,041,286
Ventura County Flood Control District Entitlement Water	0	0	0	2,083	2,210	2,002	2,162	2,182	2,120	2,204	1,686	0	16,649	28,800	12,151	214,740	226,891
Recreation/Fish and Wildlife Water	0	0	0	0	0	0	0	0	0	0	0	0	0	17,300	17,300	114,000	131,300
SWP Non-SWP Area Total	150	91	151	206	1,076	1,067	1,508	1,286	1,281	1,072	604	387	4,836	20,000	15,164	68,000	83,164
	66,523	80,802	127,547	125,162	146,779	121,919	165,552	160,786	154,855	161,715	148,753	128,152	1,588,345	4,136,316	1,657,030	13,468,593	14,967,077
	0	114	9	0	0	0	0	0	0	0	0	0	123	0	0	0	0
	66,523	80,716	127,556	125,162	146,779	121,919	165,552	160,786	154,855	161,715	148,753	128,152	1,588,468				
<b>All Agencies</b>																	
Total 1990 Entitlement Water	57,671	79,750	158,136	192,795	239,616	274,623	357,323	311,997	203,772	205,874	195,441	176,607	2,453,605				
Total 1989 Carryover Entitlement Water	32,598	51,082	44,866	0	0	0	0	0	0	0	0	0	128,546				
Subtotal (Entitlement water delivered)	90,269	130,832	203,002	192,795	239,616	274,623	357,323	311,997	203,772	205,874	195,441	176,607	2,582,151				
Demonstration Program Water	4,773	19,725	16,442	11,718	13,381	19,964	49,132	5,115	6,009	3,739	0	2	150,000				
Unscheduled Water	0	0	0	0	0	0	0	0	0	0	0	0	90				
Recreation/Fish and Wildlife Water	180	98	177	234	1,114	1,093	1,552	1,374	1,321	1,106	619	394	9,252				
Subtotal (SWP Water)	95,222	150,655	219,621	204,747	254,115	295,766	408,007	318,486	211,102	210,719	196,060	177,003	2,741,503				
Vallejo Permit Water	0	64	108	318	258	0	0	0	0	0	0	0	748				
Regulated Delivery of Local Supply	3,419	738	1,446	75,419	150,595	145,331	179,473	148,588	53,539	50,971	33,262	26,302	869,283				
YCWA Water via SWP Facilities	0	0	0	0	608	1,145	1,250	1,293	1,090	987	0	0	6,373				
DWR YCWA Water	14,398	15,535	16,572	3,027	4,470	5,434	0	0	0	0	0	2,768	62,204				
San Francisco	0	0	0	0	0	0	0	0	0	0	0	0	332				
Conveying CVP Water--Annual Contract	1,491	503	0	0	0	0	0	5	10	4	10	3	2,026				
Conveying CVP Water--Cross Valley Canal	213	5,335	6,347	10,674	8,890	9,697	11,479	8,535	0	0	0	0	61,170				
Conveying CVP Water-- Decision 1485	0	0	0	0	0	0	0	0	32,000	61,089	20,778	28,778	142,645				
Conveying CVP Water-- U.S. Fish and Wildlife	0	0	0	0	0	0	0	0	0	3,055	2,146	999	6,200				
Conveying CVP Water--Recreation/Fish and Wildlife Water	19	0	20	15	18	13	19	52	17	9	0	0	182				
Westlands Water District (1,500 AF transferred entitlement water not included)	0	0	0	0	0	0	0	2,000	2,000	0	3,300	100	7,400				
Subtotal (Other water)	19,540	22,175	24,493	89,453	164,939	161,620	192,221	160,473	88,756	116,115	59,496	59,282	1,158,563				
<b>Total</b>	114,762	172,830	244,114	294,200	419,054	457,386	600,228	478,959	299,858	326,834	255,556	236,285	3,900,066	5,756,737	2,370,507	14,717,289	15,812,196

a) Includes amounts of entitlement not delivered, deferred or otherwise, regardless whether water contractor received remuneration.

b) Reflects amounts of 1989 carry-over entitlement water delivered in 1990.

TABLE 13  
Total Amounts of Annual Entitlements and Water Conveyed, by Type, 1962 Through 1990  
(Acre-feet)

Calendar Year	Annual Entitlements According to Long-Term Water Supply Contracts							Water Conveyed								
	Upper Feather River Area (1)	North Bay Area (2)	South Bay Area (3)	San Joaquin Valley Area (4)	Central Coastal Area (5)	Southern California Area (6)	Total (7)	Deliveries					Initial Fill Water (13)	Operational Losses and Storage Changes (d) (14)	Recreation Water (15)	Total (16)
								Entitlement Water (8)	Surplus and Unscheduled Water (a) (9)	Other Water (b) (10)	Feather River Diversions (c) (11)	Subtotal (12)				
1962	0	0	0	0	0	0	0	0	0	18,289		18,289	9	272	0	18,570
1963	0	0	0	0	0	0	0	0	0	22,456		22,456	71	185	0	22,712
1964	0	0	0	0	0	0	0	0	0	32,507		32,507	171	152	0	32,830
1965	0	0	0	0	0	0	0	0	0	44,105		44,105	93	729	0	44,927
1966	0	0	0	0	0	0	0	0	0	67,928		67,928	0	1,746	0	69,674
1967	0	0	11,538	0	0	0	11,538	11,538	0	53,605		65,143	8,328	4,212	0	77,683
1968	550	0	109,900	81,050	0	0	191,500	171,709	121,534	14,777	866,926	1,174,946	498,926	117,906	0	1,791,778
1969	620	0	98,700	168,075	0	0	267,395	193,020	72,397	18,829	794,374	1,078,620	510,614	72,196	0	1,661,430
1970	700	0	114,200	207,700	0	0	322,600	233,993	133,024	38,080	759,759	1,164,856	23,947	2,435	0	1,191,238
1971	890	0	116,200	258,500	0	0	375,590	357,340	296,019	44,119	778,362	1,475,840	7,853	5,812	8	1,489,513
1972	970	0	118,300	420,766	0	201,723	741,759	611,801	423,964	66,638	817,398	1,919,801	100,274	53,062	6,489	2,079,626
1973	1,100	0	120,400	392,352	0	472,400	986,252	694,388	296,416	42,511	800,743	1,834,058	204,638	53,798	1,155	2,093,649
1974	1,230	0	122,400	470,350	0	588,220	1,182,200	874,077	417,676	46,224	911,613	2,249,590	237,554	10,657	2,118	2,499,919
1975	1,610	0	124,500	556,509	0	704,250	1,386,869	1,223,990	622,902	63,793	862,218	2,772,903	103,352	(94,606)	3,377	2,785,026
1976	1,990	0	126,500	555,117	0	824,780	1,508,387	1,373,002	580,110	115,217	946,440	3,014,769	61,122	(681,025)	1,745	2,396,611
1977	2,420	0	128,600	594,100	0	942,201	1,667,321	574,155	0	389,065	581,994	1,545,214	0	(131,151)	1,111	1,415,174
1978	1,850	0	130,700	647,262	0	1,038,222	1,818,034	1,452,699	16,914	121,225	786,517	2,377,355	64,443	717,370	1,691	3,160,859
1979	2,130	0	132,700	715,385	0	1,177,873	2,028,088	1,659,896	648,389	187,630	882,549	3,378,464	12,302	(83,430)	1,766	3,309,102
1980	1,810	500	134,800	770,800	1,946	1,304,914	2,214,770	1,529,749	404,557	46,459	875,045	2,855,810	0	(26,606)	2,131	2,831,335
1981	1,940	650	137,000	830,700	2,813	1,419,365	2,392,468	1,909,562	908,428	279,161	838,557	3,935,708	0	(802,263)	4,688	3,138,133
1982	1,970	800	139,200	889,200	5,626	1,537,749	2,574,545	1,750,024	215,873	154,882	776,330	2,897,109	0	480,752	4,646	3,382,507
1983	2,000	950	141,400	880,648	8,439	1,668,557	2,701,994	1,184,869	13,019	181,453	602,905	1,982,246	0	(90,997)	7,849	1,899,098
1984	3,630	1,100	143,600	991,911	12,698	1,731,398	2,884,337	1,588,619	262,917	381,024	832,332	3,064,892	0	(140,182)	7,040	2,931,750
1985	3,760	1,250	145,800	1,031,749	21,138	1,852,149	3,055,846	1,995,453	307,672	404,842	870,008	3,577,975	0	92,885	4,033	3,674,893
1986	4,190	1,400	148,100	1,139,200	28,210	1,971,190	3,292,290	1,995,636	36,620 (f)	193,606	791,737	3,017,599	0	284,380	3,865	3,305,844
1987	4,620	1,550	150,300	1,201,200	35,204	2,091,241	3,484,115	2,130,086 (g)	114,907	377,592	831,947	3,454,532	0	(390,413)	7,672	3,071,791
1988	5,060	15,571	152,500	1,258,800	43,722	2,212,782	3,688,435	2,385,122 (h)	0	516,481	794,834	3,696,437	0	(92,850)	4,889	3,608,476
1989	5,500	24,615	156,700	1,303,100	56,342	2,411,933	3,958,190	2,853,747 (i)	0	487,567	809,250	4,150,564	0	447,917	8,135	4,606,616
1990	6,040	27,995	160,900	1,355,000	70,486	2,487,900	4,108,321	2,582,151 (j)	90	457,316	851,247	3,890,804	0	(528,869)	9,262	3,371,176
Total	56,580	76,381	3,064,938	16,719,474	286,624	26,638,847	46,842,844	31,336,826	5,893,428	4,867,381	18,663,085	60,760,520	1,833,697	(715,926)	83,670	61,961,940

a) Values include amounts of deliveries to short-term contractors (Mustang Water District, 1970-1972; Tracy Gail and Country Club, 1974, 1979, and 1980; Green Valley Water District, 1974, 1975, 1978, 1979, 1980, and 1985; Granite Construction Company, 1980).

b) Includes amounts of preconsolidation repayment, 1977 emergency relief, and regulated delivery of local supply water; non-SWP water delivered to Napa County Flood Control and Water Conservation District through SWP facilities; 1987 Advance Storage Program water; CVP water conveyed, including D-1485 and recreation and wildlife water; 1978 and 1982 exchange water; and 1990 Ground Water Demonstration Program water. See Column 15 for information about SWP recreation water.

c) Includes amounts of Feather River diversions to Joint Water Districts Board and Western Canal Water District.

d) Includes net effect of (1) operational losses from SWP transportation facilities; (2) changes in reservoir storage south of the Delta; (3) storable local inflows to SWP reservoirs; (4) side inflow to the San Luis Canal; and (5) inflow into the California Aqueduct from the Kern River Intertie.

e) Includes 37,170 acre-feet of entitlement water carried over from 1985.

f) Includes 12,270 acre-feet of surplus water carried over from 1985.

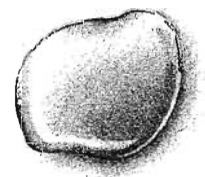
g) Includes 639 acre-feet of 1988 entitlement water delivered during 1987 and 16,171 acre-feet of entitlement water recaptured from groundwater storage.

h) Includes 67,581 acre-feet of 1987 entitlement water delivered in 1988 and 8,749 acre-feet recaptured from groundwater storage.

i) Includes 149,880 acre-feet of 1988 entitlement delivered in 1989 and 89 acre-feet of 1990 entitlement delivered during 1989.

j) Includes 128,546 acre-feet of 1989 entitlement delivered in 1990.

## 6. *Designing and Constructing Facilities*



**S**INCE THE BEGINNING OF THE STATE WATER Project (SWP), the Department of Water Resources has been involved in designing and constructing the buildings, dams, power plants, pumping plants, aqueducts, and other conveyance facilities necessary for the project to fulfill its contractual obligations.

This chapter includes information about those activities, which are organized according to SWP construction divisions. See Figure 15 on the next page for the locations of those divisions.

As important as design and construction activities are to the operation of the project, however, the Department must first purchase land or obtain the rights-of-way necessary to begin work. This chapter also includes information about those important activities.

### *Design and Construction Activities*

The designs for approximately 50 projects were in process or completed between July 1990 and June 1991. A listing of those projects, along with expected completion dates, if applicable, may be found in Table 14, "Design Activities, July 1990 Through June 1991, by Division," at the end of this chapter. Projects are listed according to SWP construction divisions (except for miscellaneous activities).

Approximately 90 construction projects were in progress during the same time. Information about those projects, including cost, date notice to begin work was given to contractors, and date work was operationally complete and recommended for acceptance, may be found in Table 15, "Construction Activities, July 1990 Through June 1991," located at the end of this chapter. Costs of contracts included in Table 15 represent actual costs of completed work or estimated final costs of construction in progress.

The names of the projects are listed chronologically by starting date according to SWP construction divisions (except for miscellaneous activities). Information about the most significant projects follows.

### *Oroville Division*

Design and construction work in the Oroville Division involved the Edward Hyatt Powerplant, Oroville Operations and Maintenance Center, and the Thermalito Powerplant.

#### *Hyatt Powerplant*

A contract to furnish automatic voltage regulators for units one through six was let in January 1990 and completed in June 1991.

In January 1991, a contract was also let to provide a fire protection system for the Hyatt High

DESIGNS  
FOR ABOUT  
50 PROJECTS  
WERE IN  
PROGRESS  
OR COMPLETED  
DURING THE  
1991 FISCAL  
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ABOUT 90  
CONSTRUCTION  
PROJECTS  
WERE IN  
PROGRESS  
DURING THE  
SAME TIME.





**Fig. 15. Names and locations of construction divisions**

Voltage Tunnel. This contract was completed in June 1991.

#### ***Oroville Operations and Maintenance Center***

Design work was completed and a contract for installing and connecting two spurs of fiber-optic cable to the fiber-optic cable backbone was let in summer 1991. One spur runs from the Oroville Operations and Maintenance Center to the backbone near the Oroville Dam spillway; the other, from the California Department of Forestry's building to the backbone at the Thermalito Power Canal.

Recoating of transformers, towers, and appurtenant switchyard equipment at the Oroville power facilities was accomplished as part of a contract completed September 1990.

#### ***Thermalito Powerplant***

The generators for units 2, 3, and 4 were repaired under a construction contract. This work, begun in February 1989, was completed in July 1990.

### ***North San Joaquin Division***

Design and construction activities in the North San Joaquin Division involved the Harvey O. Banks Delta Pumping Plant; California Aqueduct; rock barriers at Old River; John E. Skinner Fish Facility; Suisun Marsh Salinity Control Gates; and various miscellaneous projects.

#### ***Banks Pumping Plant***

Design work for additions to Banks Pumping Plant, which involved a service bay at the north end of the existing plant; pump units 8, 9, 10, and 11; and appurtenances, was completed in August 1990. All facilities are planned to be operational in early 1992.

The phase-two enlargement of Banks Pumping Plant, which includes furnishing and installing four vertical centrifugal pumps, pump motors, pump discharge valves, transformers, switchboards, switchgear, and a completion contract, are currently in progress.

#### ***California Aqueduct***

A small leak in the California Aqueduct at Mile 56 was repaired, and curtain holes were drilled and filled with grout from January 4 to January 18, 1990. The grouting did not stop the leak, so the aqueduct was taken out of service to remove the aqueduct's concrete lining, excavate and replace approximately 80,000 cubic yards of material under and along the sides of the aqueduct; and pour a new concrete lining. Repairs were completed and the aqueduct was brought back into service on July 10, 1990.

#### ***Old River Rock Barriers***

The design office completed work for the installation of the temporary barriers as part of the initial testing for permanent barriers to be placed in Old River near the San Joaquin River and in Old River near the Delta-Mendota Canal intake. (Installation is being completed as part of the South Delta Water Management Plan; see Chapter 11, "Managing Delta Resources.")

Contracts for installing the barriers in Old River were let out to bid in spring 1991. Because of difficulties in obtaining permits, the bids and contracts had to be canceled and were let out to bid again in summer 1991.

One contract was for installing and removing the temporary barrier near the Delta-Mendota Canal. That barrier will be constructed of dumped rock and will include ramps for boat portage. The other contract was for installing and removing the barrier in the San Joaquin River. That barrier will also be constructed of dumped rock but will not include boat portage facilities.

The Department anticipates placing and removing both barriers each year during the five-year testing phase.

### ***Skinner Fish Facility***

Design work for the third phase of the Skinner Fish Facility consisted of preparing drawings and specifications for the addition of a new building to house three additional holding tanks.

The building, which will be adjacent to the existing fish protective facility at Clifton Court Forebay, will include appurtenant piping and a valve gallery. Each holding tank will have a maximum operational capacity of 30 cfs.

Construction of new holding tanks, a holding tank building, and appurtenant equipment at the Skinner Fish Facility is currently in progress, with completion scheduled for February 1992.

Additional work at the Skinner Fish Facility includes modifications of the control building and vehicle storage building to accommodate activities conducted by the Department of Fish and Game. The scope of the project has been established, and design work began January 1991. Completion is scheduled for spring 1992.

Other construction activities during this period included removing underground fuel tanks.

### ***Suisun Marsh Gates***

The Suisun Marsh salinity control gates have been operational since October 1988. The gate

structure was modified for safety reasons according to terms of a construction contract completed in December 1990.

In May 1991 the design office prepared plans for improving boating access to the boat locks and modifying the (1) shackles on the gates; and (2) gates for the Roaring River facility. A contract was let out for bid in spring 1991.

### ***Miscellaneous Projects***

Other construction completed in the North San Joaquin Division included performing miscellaneous road repair work; reconstructing the Middle River tidal barrier and temporarily closing Old River; applying a protective exterior coating to South Bay, Del Valle, and Cordelia surge tanks; and constructing the San Antonio Turnout on the South Bay Aqueduct for the city of San Francisco.

Construction contracts for site modifications and installation of a remote terminal unit for the South Bay Aqueduct and a floating dock system for the Old River rock barrier were started in spring 1991. Projects are scheduled for completion in fall 1991.

Work continues on a contract to furnish seven replacement pump impellers for Banks Pumping Plant and Dos Amigos Pumping Plant. The contract is scheduled to be completed in December 1992 (see "Miscellaneous Activities" in Table 15 at the end of this chapter).

### ***San Luis Division***

Construction contracts in this division involved making repairs to and maintaining existing facilities.

At William R. Gianelli Pumping-Generating Plant, the furnishing of wearing rings and cap screws, replacement of 230-Kv main circuit breakers, and coating of the plant exterior siding were completed in June 1991. Seal coating of operating roads was also performed during this reporting period.



## ***South San Joaquin Division***

Design and construction activities in the South San Joaquin Division involved the Coastal Branch of the California Aqueduct; Kern Water Bank; La Hacienda water extraction element; and the following pumping plants: Buena Vista, Chrisman, Oso, and Wheeler Ridge.

### ***Coastal Aqueduct***

A major leak in the Coastal Aqueduct at Milepost 12.9 was discovered and temporarily repaired in November 1990 by placing a geomembrane in the aqueduct to temporarily stop the leak until a permanent repair could be performed.

Design work is scheduled for completion in August 1991; a contract for repairing this leak is scheduled to be let in fall 1992.

### ***Kern Water Bank***

Because of the continuing drought and to augment water supplies, the Department rehabilitated some existing wells in the Kern Water Bank. Construction contracts for rehabilitating wells and constructing conveyance facilities were let in December 1990.

Difficulties in obtaining environmental permits have delayed completion of some work and required shifting of other work to future contracts.

### ***La Hacienda Water Extraction Facilities***

Two contracts for the La Hacienda water extraction element of the Kern Fan development were awarded in winter 1990. Design components of those contracts consisted of providing conveyance facilities (small canals and pipelines) and rehabilitating deep water wells.

Design work was completed and construction began in December 1990. The majority of the work was completed by April 30, 1991; since then, however, work was halted until environmental issues can be resolved.

Twenty-three deep water wells were incorporated in the initial design; and the total design

capacity of the extraction element is 50,000 acre-feet per year. Extraction is scheduled to take place over a two-year period.

The water pumped from the wells will be conveyed through the small canals and pipelines to canals owned by Kern County Water Agency and Buena Vista Water District and then distributed through their systems to local water districts.

Because of the fifth year of the drought, the Department is considering expanding the La Hacienda water extraction element to include 17 more wells and additional conveyance facilities. The facilities will be used to deliver an additional 16,000 acre-feet of water to the Kern County Water Agency's Cross Valley Canal.

### ***Pumping Plants***

The furnishing of 24 replacement pump impellers for Buena Vista, Chrisman, Oso, and Wheeler Ridge pumping plants is nearing completion. Rewinding four existing pumping unit motors at Buena Vista, Chrisman, and Wheeler Ridge pumping plants was accomplished during this reporting period as was the recoating of discharge lines at Buena Vista and Chrisman pumping plants.

Additions to the training center and operations and maintenance warehouse were constructed during this reporting period.

## ***Tehachapi Division***

Current construction activities in this division include rewinding three pumping unit motors at A. D. Edmonston Pumping Plant.

## ***Mojave Division***

Design and construction activities in the Mojave Division involved the Alamo Powerplant; East Branch enlargement of the California Aqueduct, including design work for the third barrel of the Antelope Siphon and second pipeline of the Mojave Siphon; Mojave Siphon Powerplant; and Pearblossom Pumping Plant.

## ***Alamo Powerplant***

Vibration and bearing problems with the turbine/generator shaft were resolved in early 1991. Based on an analysis of data gathered in 1988, the Department's consultants recommended that an intermediate shaft bearing be provided and an existing bearing be stiffened. The contractors of both the turbine and generator submitted proposals for correcting the problem; the Department's design office evaluated those proposals and directed that the necessary remedial work be performed.

Both contractors are in the process of submitting their design for the directed remedial work.

## ***East Branch Enlargement***

The East Branch of the California Aqueduct will be enlarged in two stages to accommodate an additional flow of 1,500 to 1,683 cfs in the affected reaches. During the first phase, the lining of the aqueduct between Alamo Powerplant and Mojave Powerplant was raised four feet to allow for the increased water flow. To accommodate that increase in flow, seven vacuum-activated turnouts belonging to the Antelope Valley-East Kern Water Agency were modified.

The second phase, which is not yet scheduled, is designed to increase the aqueduct lining an additional foot when the demand for additional flow exists.

Information about additional activities associated with the East Branch enlargement follow.

*Antelope Siphon Third Barrel.* The final design for installing the third barrel was revised to reflect the consolidation of work in a lump-sum contract. A contract was awarded in mid-1991 to construct a the third barrel for the Antelope Siphon, with a completion date set for August 1992.

Design work was completed in January 1991 for a separate contract to jack the portion of the third barrel that passes under the Atchison, Topeka, and Santa Fe Railroad.

*Mojave Siphon Second Pipeline.* Design work for the second pipeline was delayed to design a

steel pipe alternative and change the pipeline from one to three new barrels. The existing barrel will be used as a bypass; each new barrel will deliver water to one unit in the Mojave Siphon Powerplant.

Drawings and specifications for the initial contract were completed in August 1991. Bids for constructing the second barrel are scheduled for November 1991.

Construction activities required for enlarging the 15 existing siphons is ahead of schedule; work has been completed on 13. Work on nine circular siphons was completed in January 1990, ahead of the scheduled completion date of April 1990.

## ***Mojave Siphon Powerplant***

Mojave Siphon Powerplant, a new power-generating facility on the East Branch of the California Aqueduct, will contain three 10.8-MW generation units, each capable of passing 960 cfs. The plant is scheduled to be operational by late 1994.

Design work was completed for contracts for the turbines, generators, and governors; crane; switch-gear; and switchboard. Construction of the initial structure of the Mojave Siphon Powerplant and fabrication of a gantry crane were started in fall 1990. Manufacturing and fabricating three vertical Francis turbines, generators, and governors are under way.

The contractor of the initial plant structure completed approximately 95 percent of the plant bowl and discharge line excavation before the work was stopped by the contractor for alleged unstable ground conditions.

## ***Pearblossom Pumping Plant***

Design work for the enlargement of Pearblossom Pumping Plant to house five new pumping units was completed, along with design work for the additional third discharge line and portions of the fourth discharge line, and all major construction contracts have been let. Construction of the plant's concrete substructure was completed in October

1990, and the structural steel superstructure was erected in January 1991.

During the first stage of the plant's enlargement, three units are being installed, each with 375 cfs design capacity. Two of the new units will raise the total plant capacity to 2,200 cfs, and the third will serve as a spare unit to enhance reliability. Installation of the three new pumping units was started in October 1990, and all three units are scheduled to be operational in mid-1992.

The third and portions of the fourth discharge line are being constructed as part of two separate contracts. Because two contracts were awarded, work was completed at the headworks even though a system outage occurred between December 4, 1989, and February 2, 1990.

Approximately 1.1 miles of the third discharge line has been completed from the vicinity of the switchyard to the canal intake structure. After work on the discharge manifold has been completed, work remaining on the line will be completed under a separate contract with a completion date in winter 1992. The portion of the fourth discharge line not provided for in those two contracts will be designed and constructed at a later date.

In April 1991, a fire destroyed most of the plant's roof. The exact cause of the fire could not be determined, but the contractor of the initial plant structure was directed to replace the damaged roof. That work is currently under way.

### ***Santa Ana Division***

Design and construction work in the Santa Ana Division involves enlarging the Devil Canyon Powerplant to accommodate two additional generating units. Two 800-cfs impulse turbines, together with the two existing 600-cfs impulse turbines, will increase the plant's capacity to 2,800 cfs.

Construction of the plant structure and a second penstock is in progress as well as the installation of two new turbines, governors and valves, bypass equipment, generators, switchgear, switchboards, 115-kV power circuit breakers, and a penstock butterfly valve.

The two new generating units (3 and 4) are scheduled to be in operation in early 1992. Construction of a new second afterbay is scheduled to begin in early 1992. A construction contract for modifications to the Rialto Pipeline in the vicinity of Devil Canyon Powerplant was let in April 1991 and is scheduled to be completed in December 1991.

### ***West Branch***

Design and construction activities in the West Branch include modifications to Gorman Creek Channel and construction of the Vaquero Recreational Facility and Vista del Lago Visitors' Center at Pyramid Lake, which was started in mid-1991 with the letting of the first of several construction contracts. Those facilities are scheduled for completion in mid-1992.

#### ***Gorman Creek Channel***

Work continued on the Gorman Creek Channel modifications, which are designed to protect the Peace Valley Pipeline from damage or disruption during flooding. The design work is scheduled for completion in February 1992.

#### ***Vaquero Recreational Facility***

Funded by the Department of Parks and Recreation, design work was completed and construction began in mid-1991.

The design involved an access road, parking lot, boat ramp, dock, beach, picnic units, showers, comfort stations, and a water supply system, which will also serve the Vista del Lago Visitors' Center.

#### ***Vista del Lago Visitors' Center***

Design work has been completed. Construction began in June 1991, and the center should be open in late June 1992.

The 18,466 square-foot building includes 16,000 square feet of exhibit space; an auditorium with seating for 138 people; and a 153-space parking lot with spaces designed for handicapped parking and for recreational vehicles and buses. The Depart-

ment estimates a maximum of 2,000 visitors per day.

### ***Miscellaneous Design and Construction Activities***

Miscellaneous design and construction activities include conducting a study of the San Bernardino Tunnel intake tower; repairing and modifying existing facilities as part of master repair contracts; and establishing a new California Water Center to be constructed on Jibboom Street in Sacramento.

The Department has committed almost \$20 million for replacing impellers for six units at six pumping plants, Banks, Buena Vista, Chrisman, Dos Amigos, Oso, and Wheeler Ridge. See Table 15 at the end of this chapter for additional information.

#### ***California Water Center***

The Department plans to construct the California Water Center on Jibboom Street in Sacramento. To consist of the renovated Pacific Gas and Electric (PG&E) Steam Generating Power Plant, adjacent parking structure, and a new four-story building with basement parking constructed next to the PG&E plant, the center is expected to be completed in November 1993.

Once renovated, the PG&E plant, designed by noted California architect Willis Polk, will serve as a visitors' center and feature educational exhibits depicting the history of water development in California.

The new four-story building to be constructed next door will be identified as the Water Operations Center and house operational functions of the State Water Project, Central Valley Project, the forecasting activities of the National Weather Service Regional Forecasting Center, and the major portion of the Department's flood management offices.

Dreyfuss and Blackford, a Sacramento architectural firm, was selected to design the project. They will preserve the original design of the building and incorporate elements of the design into the design of an adjoining two-story building.

The appropriate schematic, design development, and construction documents for both buildings have been developed. Before construction can begin, however, the Department must remove hazardous waste materials and shore up the foundation of the older building.

Removal of the materials, which included asbestos, petroleum products, and heavy metals (lead, zinc, and mercury), was completed in February 1991 at a cost of more than \$2.5 million. Costs escalated from the original estimate of \$896,000 because more materials were found than originally estimated.

To shore up the foundation of the building, the firm of Hayward Baker was selected, and work is to be completed in December 1991.

#### ***Repairs and Modifications***

Repairs to and modifications of existing facilities included designing the San Antonio turnout on the South Bay Aqueduct for the city of San Francisco; preserving the roofs of buildings and reroofing at San Joaquin Operations and Maintenance Center, Gianelli Pumping Plant, and Delta Operations and Maintenance Center, among others.

Work also includes protecting the stone slopes at Barker Slough; repairing the Mojave Siphon pipeline mortar lining; excavating at the Mojave Siphon; and recoating and repairing roads to various facilities of the California Aqueduct. See "Miscellaneous Activities" in Table 14 and "Miscellaneous Activities" in Table 15.

#### ***San Bernardino Tunnel Intake Tower***

The design office determined that the San Bernardino Tunnel Intake Tower is not structurally adequate to resist forces that would be produced by a large earthquake. A preliminary design study of Sidehill Intake Structure is under way.

Work to be concluded in 1990-91 includes a feasibility study and implementation of environmental documentation. Final design is scheduled for 1991-92, with construction scheduled to begin in late 1992 or early 1993. The project should be completed in early 1994.

The design studies will also include an evaluation of a second San Bernardino tunnel, which could increase the power generation capacity at the Devil Canyon Powerplant by 50 megawatts.

## ***Land and Right-of-Way Activities***

In fiscal year 1990-91 the Department spent \$314,000 in excess of credits for sales and surplus property and return of condemnation deposits to acquire land. The total net amount spent to acquire rights of way for SWP through June 30, 1991, was \$178 million.

In addition, 15 parcels (approximately 26,019 acres) were acquired during this fiscal year; four parcels (35 acres) of excess land was sold. The Department also monitored 63 leases during the reporting period; annual revenues from those leases totaled \$935,000.

The Department's land and right-of-way program for fiscal year 1990-91 included the following actions:

*Arroyo Pasajero.* Acquired rights to enter 75 properties to conduct environmental studies.

*Coastal Branch.* Acquired rights to enter 27 properties to conduct environmental studies.

*Delta.* Began negotiation to acquire eight parcels on Twitchell Island (3,610 acres) at a cost of \$3.5 million.

*East Branch Enlargement Project.* Acquired five parcels for the project; two parcels remain to be acquired. Negotiations are in progress. Also acquired rights to enter 31 properties to conduct soil studies in connection with the second afterbay at Devil Canyon Powerplant.

*Kern Water Bank.* Purchased the crop leasing rights from 10 farmers within Kern Water Bank at a cost of \$3,100,000 to fallow 7,235 acres.

*North San Joaquin.* Acquired permanent and temporary rights for repair of California Aqueduct at Mile 56.

*Oroville.* Acquired rights from the city of Oroville and Butte County to install two spurs of fiber-optic cable to connect to the fiber-optic cable backbone. One spur runs from Oroville Operations and Maintenance Center to the backbone near the Oroville Dam Spillway. The other spur runs from the California Department of Forestry's building to the backbone at the Thermalito Power Canal.

TABLE 14  
Design Activities, July 1990 Through June 1991, by Division

<i>Construction Division and Facility</i>	<i>Construction Contract</i>	<i>Date Design Began</i>	<i>Date Design Completed</i>
<b>Oroville Division</b>			
	Sediment Removal, Fremont Weir	December 1990	April 1991
	Fiber Optic Cable, Phase II	January 1991	May 1991
	Reseal Paved Areas	January 1991	February 1991
<b>North San Joaquin Division</b>			
	Reconstruction of Tidal Barrier, Middle River	September 1990	October 1990
	Rock Barriers, Old River	November 1990	March 1991
Banks Pumping Plant	Service Bay, Pump Units, Appurtenances	Not Available	August 1991
North Bay Aqueduct	Grounding Transformers and Other Equipment	April 1991	November 1991
Skinner Fish Facility	Additional Fish Tanks, Phase III	January 1988	July 1990
	Fiber Optic Cable Installation, Phase II	December 1990	July 1991
South Bay Aqueduct	Site Modification and RTU Installation	April 1990	November 1990
South Bay Pumping Plant	Painting	September 1990	February 1991
	Furnish and Install Spare Pumps and Motors	Not Available	March 1991
Suisun Marsh Salinity Control Gates	Structural Modification, Phase II	December 1990	May 1991
<b>San Luis Division</b>			
Gianelli Pumping/Generating Plant	Recoat Siding	October 1990	February 1991
	Recoat Switchyard and Transformer	January 1991	April 1991
<b>South San Joaquin Division</b>			
	Replacement Tanks for San Joaquin Division	March 1988	Not Available
	Civil Maintenance Service Shop and Warehouse,		
	San Joaquin O&M Center	May 1990	May 1991
	General Maintenance Warehouse Addition,		
	San Joaquin O&M Center	May 1990	December 1990
	La Hacienda Water Extraction Facility	July 1990	December 1990
	Coastal Aqueduct Repair, Mile 12.9	September 1990	August 1991
	Primary Operating Road, Phase I	December 1990	February 1991
Buena Vista Pumping Plant	Recoat Discharge Lines	January 1990	December 1990
	Stator Rewind, Unit 10	September 1990	April 1991
Wheeler Ridge Pumping Plant	Stator Rewind, Unit 3	October 1990	April 1991
Chrisman Pumping Plant	Stator Rewind, Unit 3	December 1990	June 1991
<b>Tehachapi Division</b>			
A. D. Edmonston Pumping Plant	Rewind Stator, Unit 13	October 1990	November 1990
	Recoat Surge Tank	February 1991	June 1991
<b>Mojave Division</b>			
East Branch Enlargement	Antelope Siphon, Third Barrel	July 1988	October 1990
Canals and Structures	Antelope Siphon, Third Barrel Pipe Jacking	July 1988	January 1991
	Mojave Siphon, Second Pipeline	January 1989	May 1991
	Canal Banks and Lining, California Aqueduct	March 1991	December 1991
Mojave Siphon Powerplant	Completion Contract	July 1989	November 1991
	Crane	August 1989	August 1990
	Valves	January 1990	January 1991
	Switchgear Motor Control Centers	March 1990	August 1991
	Switchboards	March 1990	July 1991
	Power Transformer	March 1991	March 1992
	Flowmeter	Not Available	June 1991
Pearblossom Pumping Plant	Expansion of Subcenter Warehouse	April 1991	December 1991
<b>Santa Ana Division</b>			
Devil Canyon Powerplant	Second Afterbay	October 1988	January 1992
	Modifications to Rialto Pipeline	January 1990	January 1991
<b>West Branch</b>			
	Vista del Lago Visitors' Center	March 1987	January 1991
	Vaquero Recreational Facility	April 1988	January 1991
	Gorman Creek Channel Modifications	March 1990	February 1992
Warne Powerplant	Site Modification and RTU Installation,		
	Southern Field Division	April 1990	August 1991
<b>Miscellaneous Activities</b>			
California Water Center	Visitors' Center, Phase I	Not Available	Not Available
(CWC)	Completion, Visitors' Center	Not Available	Not Available
	Completion, New CWC Building	Not Available	Not Available



TABLE 15  
Construction Activities, July 1990 Through June 1991, by Division

Construction Division and Facility	Construction Contract (Specification number)	Starting Date	Ending Date	Contract Costs (Thousands of dollars)
<b>Oroville Division</b>				
Thermalito Powerplant	Repair Generator Units 2, 3, and 4 (89-11)	February 1989	January 1990	
Edward Hyatt Powerplant	Voltage Regulators, Units 1-6 (89-51)	January 1990	June 1990	971
Oroville Complex	Recoat of Transformer Towers and Appurtenances (90-10)	April 1990	September 1990	117
	High Voltage Tunnel Fire Protection System (90-39)	January 1991	June 1991	
<b>North San Joaquin Division</b>				
Banks Pumping Plant	Four Centrifugal Pumps Installation (87-18)	September 1987	December 1991	7,733
	Pump Discharge Valves (88-25)	September 1988	December 1991	4,719
	Motors (88-40)	November 1988	November 1991	11,888
	Transformers (89-02)	May 1989	February 1991	1,481
	Carrier Rings and Cap Screws for 84-inch Pump Discharge Valve (89-01)	July 1989	January 1990	220
	Switchboards and Switchgear (89-10)	July 1989	February 1991	1,354
	Completion Contract (89-09)	August 1989	May 1992	7,324
Skinner Fish Facility	New Holding Tank Building and Improvements-Phase II (90-35)	December 1990	February 1992	4,351
Suisun Marsh Salinity Control Gates	Structural Modifications (90-15)	July 1990	December 1990	491
Miscellaneous Activities	Rock Barrier Construction and Removal (90-11)	March 1990	September 1990	51
	Protective Exterior Coating, South Bay Surge Tanks, Del Valle Surge Tank, and Cordelia Surge Tank (90-09)	April 1990	July 1990	40
	San Antonio Turnout - South Bay Aqueduct (90-19)	July 1990	December 1990	4
	Old River Temporary Closure (90-34)	August 1990	November 1990	33
	Old River Barrier, Floating Dock System (91-08)	February 1991	April 1991	40
<b>South San Joaquin Division</b>				
Buena Vista Pumping Plant	Stator Rewind, Unit 7 (90-08)	April 1990	November 1990	418
	Stator Rewind, Unit 9 (90-26)	September 1990	March 1991	430
Chrisman Pumping Plant	Circuit Breakers Modification (89-45)	November 1989	March 1991	267
	Stator Rewind, Unit 4 (90-03)	March 1990	August 1990	455
	Discharge Lines Recoating (90-12)	May 1990	September 1990	283
	Stator Rewind, Unit 9 (90-29)	September 1990	June 1991	522
Wheeler Ridge Pumping Plant	Stator Coil, Unit 8 (90-32)	September 1990	January 1991	259
	Discharge Lines Recoating (90-01)	March 1990	August 1990	342
	Stator Rewind, Unit 4 (90-06)	March 1990	September 1990	388
Miscellaneous Activities	Replacement Pump Impellers, Buena Vista and Wheeler Ridge Pumping Plants (88-13)	July 1988	January 1991	6,575
	Replacement Pump Impellers, Chrisman and Oso Pumping Plants (88-14)	July 1988	October 1990	3,700
	Training Center Addition (90-25)	August 1990	April 1991	240
<b>Tehachapi Division</b>				
Edmonston Pumping Plant	Stator Rewind, Units 6 and 8 (90-07)	March 1990	December 1990	1,016
	Stator Rewind, Unit 1 (90-36)	October 1990	June 1991	536
	Stator Rewind, Unit 13 (90-41)	November 1990	January 1991	684
<b>Mojave Division</b>				
Alamo Powerplant (a)	Turbine (80-16)	October 1980	Not Available	2,117
	Generator (83-14)	August 1983	Not Available	2,100
	Acoustic Flowmeter (84-07)	April 1984	Not Available	108
East Branch Enlargement Canals and Siphons	Nine Circular Siphons (87-44)	March 1988	January 1990	11,220
	Canal Structure Modification, Alamo Power Plant to Pearblossom Pumping Plant (88-49)	April 1989	May 1991	3,560
	Canal Structure Modification, Pearblossom Pumping Plant to Mojave Powerplant (89-39)	September 1989	February 1991	1,526
	Third Barrel, Antelope Siphon (90-44)	March 1991	August 1992	5,000
	Pipe Jacking Under Railroad, Antelope Siphon Third Barrel (91-06)	April 1991	December 1991	439
Pearblossom Pumping Plant Enlargement, Phase II	Vertical Centrifugal Pumps (87-04)	May 1987	March 1992	3,591
	Motors (87-48)	June 1988	December 1991	9,600
	Pump Discharge Valve Units (88-18)	July 1988	March 1992	1,523

a) Final completion dates cannot be determined until turbine/generator shaft bearing and vibration problems are resolved.

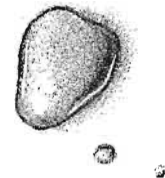


TABLE 15  
Construction Activities, July 1990 Through June 1991, by Division (Continued)

<i>Construction Division and Facility</i>	<i>Construction Contract (Specification number)</i>	<i>Starting Date</i>	<i>Ending Date</i>	<i>Contract Costs (Thousands of dollars)</i>
<b>Mojave Division (continued)</b>				
	Switchboards (88-24)	July 1988	July 1990	624
	Initial Contract (88-17)	August 1988	August 1991	22,925
	Switchgear (88-30)	September 1988	September 1990	946
	Bridge Cranes (88-37)	September 1988	June 1990	574
	230-kV Equipment (88-50)	May 1989	July 1990	762
	Third Discharge Line (89-24)	September 1989	July 1991	10,038
	Power Transformer, Unit 9 (89-33)	October 1989	May 1991	798
	Completion Contract (89-36)	November 1989	April 1992	9,865
	Third Discharge Line Completion (90-02)	March 1990	July 1991	6,044
<b>Mojave Siphon Powerplant</b>	Turbine, Generators, and Governors (89-13)	August 1989	December 1994	14,482
	Initial Contract (90-22)	October 1990	September 1992	22,600
	75-Ton Gantry Crane (90-38)	December 1990	October 1992	794
<b>Santa Ana Division</b>				
<b>Devil Canyon Powerplant Enlargement</b>	Bypass Equipment, Sleeve Valve (87-05)	July 1987	February 1991	457
	Turbines, Governors, and Valves (87-15)	July 1987	January 1992	12,717
	Initial Contract (88-07)	July 1988	May 1991	23,357
	Generators (88-47)	May 1989	April 1992	10,179
	Second Penstock (88-48)	April 1989	January 1991	31,300
	Switchgear (89-03)	July 1989	January 1991	2,077
	Switchboards (89-04)	June 1989	February 1991	590
	115-kV Power Circuit Breakers (89-15)	July 1989	March 1991	368
	Power Transformers (89-32)	October 1989	March 1991	2,071
	Penstock Butterfly Shutoff Valve (89-46)	December 1989	June 1991	1,032
	Completion Contract (90-20)	August 1990	September 1992	11,400
	Modification to Rialto Pipeline (91-07)	April 1991	December 1991	935
<b>West Branch</b>				
	Vista del Lago Visitors' Center	Mid-1991	Mid-1992	
	Vaquero Recreational Facility	Mid-1991	Mid-1992	
<b>Miscellaneous Activities</b>				
	Multiplant Acoustic Flowmeters - Oroville, Delta, San Luis, San Joaquin, and Southern Field Divisions (89-28)	July 1989	December 1992	4,833
	Electrical Power Apparatus Repairs: Oroville, Delta, San Luis, San Joaquin, and Southern Field Divisions (89-31)	August 1989	June 1992	2,894
	Aqueduct Modification (89-26)	September 1989	June 1990	1,903
	Seal Rings, Seal Pistons, and Shaft Sleeves, Edmonston and Chrisman Pumping Plants (89-22)	September 1989	October 1990	473
	Pump Impeller Replacement - Banks and Dos Amigos Pumping Plants (89-35)	October 1989	December 1992	7,415
	Repair Work: Machining and Mechanical Repairs, Oroville, Delta, and San Luis Field Divisions (89-31)	October 1989	June 1992	897
	Repair Work: Machining and Mechanical Repairs, Southern and San Joaquin Field Divisions (89-29)	October 1989	June 1992	820
	Mojave Siphon Excavation and Dewatering, Station 2304 and 2307 (90-13)	January 1990	January 1990	25
	Hazardous Materials Removal, Water Operations Center	February 1990	February 1991	2,500
	Roof Preservation, Check Structures and Buildings (90-05)	April 1990	September 1990	242
	230-kV Circuit Breakers and Gas Processing Cart - Edmonston & Gianelli Pumping Plants (90-16)	June 1990	July 1991	3,100
	Cathodic Protection - Peace Valley Pipeline and Badger Hill Pumping Plant (90-24)	September 1990	February 1991	79
	Conveyance System - La Hacienda Water Extraction Facility (90-43)	December 1990	April 1991	1,701
	Well Rehabilitation - La Hacienda Water Extraction Facility (90-42)	December 1990	May 1991	1,523
	Foundation Improvements, Water Operations Center (91-03)	March 1991	December 1991	1,357



# 7. *Ensuring Safety of Facilities*



**T**HE DEPARTMENT OF WATER RESOURCES, through the Division of Operations and Maintenance, monitors the performance and operation of dams, aqueducts, and pumping and generating plants operated by the State Water Project (SWP) and ensures facilities are properly maintained.

Operations and Maintenance staff collect and evaluate performance data such as vertical and horizontal movement, seepage flows, and hydrostatic pressure to ensure the safety and continued operation of each facility.

The data collected by Operations and Maintenance staff are summarized in performance reports, which are reviewed by the divisions of Operations and Maintenance, Design and Construction, and Safety of Dams, as required.

Although the Department's staff inspects and maintains SWP's dams, aqueducts, and pumping and generation facilities on a continual basis, the Department periodically contracts with independent consultants to review each facility. In addition, the Federal Energy Regulatory Commission (FERC) reviews current and past records of facilities under its jurisdiction, evaluates the information, and makes recommendations for correcting problems to the director.

This chapter includes information about the Department's inspection and maintenance activities as well as information about the activities of independent consultants and federal agencies.

## *Inspection and Maintenance*

As part of the Department's program to continually monitor and maintain SWP facilities, 13 dams, two power plants, one intake tower, and two canal embankments were inspected between July 1, 1990, and June 30, 1991, by Project Surveillance. Also, throughout the year, routine and scheduled maintenance was performed on all plants and the California Aqueduct.

In addition, the Division of Operation and Maintenance at Department headquarters in Sacramento ensures that SWP facilities are inspected each year by appropriate headquarters personnel; and their findings are consolidated in an annual inspection report for each field division.

Also, as part of its responsibilities for maintaining the California Aqueduct, the Department, working with the U.S. Bureau of Reclamation (USBR), developed a program for minimizing the damage to a section of the California Aqueduct affected by the Arroyo Pasajero watershed during heavy flooding.

Information about those activities, organized in two sections, "Inspection of Facilities" and "Maintenance of Facilities," follows.

### *Inspection of Facilities*

Performance reports on Antelope, Bethany, Cedar Springs, Clifton Court Forebay, Frenchman,

THE DIVISION OF OPERATIONS AND MAINTENANCE ENSURES THAT FACILITIES ARE INSPECTED EACH YEAR. REPAIRS AND MODIFICATIONS ARE MADE WHEN NECESSARY TO ENSURE THE SAFE, RELIABLE DELIVERY OF WATER.

Grizzly Valley, Little Panoche Detention, Los Banos Detention, O'Neill, Oroville, Perris, B. F. Sisk San Luis, Thermalito Diversion and Afterbay dams, and Alamo and William E. Warne power plants were started or completed during the period of July 1, 1990, to June 30, 1991.

Information about specific facilities follows.

### ***Bethany Dam***

Cracking along the crests of Bethany Dam One and Two suggested movement of the common abutment between the two dams. Fifteen new surface monuments on survey lines were installed near the common abutment; since January 1991 readings have been collected monthly.

The Division of Design and Construction and the Division of Safety of Dams recommended installing four slope indicators to monitor movement of the dam's foundation. Those will be installed in fall 1991.

### ***Little Panoche Detention Dam***

The U. S. Bureau of Reclamation (USBR) is studying remedial alternatives necessary for the dam to safely pass the revised probable maximum flood, which is based on statistics and historical data about rainfall and runoff.

### ***Los Banos Detention Dam***

The U.S. Bureau of Reclamation agreed to delay safety studies for the dam until final plans for Los Banos Grandes dam have been determined.

In a feasibility study of the dam's early warning system, USBR indicated that during a maximum flood, the existing warning system would not be effective. Hence, USBR reasoned that the system is not needed. The Department agrees with USBR; however, the Department believes that the current operations plan for emergency conditions is appropriate for the interim period.

### ***O'Neill Dam***

A performance report was completed for O'Neill Dam; in addition, drawings and specifications for the seismic strengthening of the dam were prepared

by USBR and reviewed and commented on by the Department.

A contract for \$7.2 million to strengthen the dam was awarded on April 12, 1991. Work began on May 2, 1991, and is expected to be completed in 1992, perhaps sooner.

### ***Peace Valley and Quail Embankments***

Seismic stability analyses of Quail Detention and Peace Valley embankments were performed for FERC. Both embankments were found to be stable.

### ***San Bernardino Tunnel Intake Tower***

The seismic stability of the San Bernardino tunnel intake tower was evaluated at the recommendation of the 1989 FERC consulting team. As a result of the evaluation, the Department concluded that the tower would be severely distressed during a large earthquake. Corrective methods are being investigated, and a recommendation to FERC should be made by December 1991.

### ***B. F. Sisk San Luis Dam***

Monitoring for cracks in the dam and for movement in the upstream slope protection riprap is continuing. No new cracks have been observed since 1986.

### ***Thermalito Diversion and Afterbay Dams***

Three of the spillway energy dissipators at the Thermalito Diversion Dam were damaged by fish-release flows from a poorly positioned fixed-cone valve (before the new power plant became operational).

Costs for repair, excluding environmental considerations, as estimated by the Division of Design and Construction, are from \$230,000 to \$270,000.

## ***Maintenance of Facilities***

Facilities are monitored throughout the year and repairs and modifications are performed to ensure the safe, reliable delivery of water.

Information about those activities, including those involving a section of the California Aqueduct affected by the Arroyo Pasajero watershed, follows.

### ***Arroyo Pasajero Improvements***

The Arroyo Pasajero drains approximately 500 square miles west of the California Aqueduct near Coalinga in Fresno County. During periods of heavy rainfall, the Arroyo Pasajero watershed carries much sediment, which has resulted in an alluvial fan extending into the San Joaquin Valley.

The California Aqueduct, constructed across the alluvial fan, was designed to take drainage and sediment into account. However, by observing the effects of floods in 1969, the Department discovered that the amount of both the watershed runoff and sediment load had been underestimated in the original design.

Since that time, the Department and USBR, the agency responsible for the design of the section of aqueduct affected by Arroyo Pasajero, have been working to minimize the damage during heavy flooding. In addition, in 1980 a significant amount of asbestos was discovered in runoff from Arroyo Pasajero. Since then, the Department has adopted operating procedures to minimize runoff entering the aqueduct.

The Department uses existing facilities to protect the aqueduct and plans to purchase additional land on the west side to provide a greater impoundment capacity. However, those measures are viewed as interim solutions because they do not meet the Department's standard design criteria for protection against a 100-year storm flood.<sup>1</sup>

Alternative plans for a long-term remedy to the drainage problem includes:

1. Purchasing additional land to further enlarge the impoundment basin

2. Building upstream dams to retain the water and sediment in the upper watershed, which could be used in combination with a smaller enlargement of the west-side impoundment
3. Constructing an overchute to carry flood waters over the aqueduct and dispersion facilities on the aqueduct's east side

The Department is also investigating the possibility of carrying the storm waters across the aqueduct into east-side impoundments.

In May 1991 the U.S. Corps of Engineers began a reconnaissance study of the entire watershed to develop a broader, multipurpose solution to drainage problems in this area. The study is expected to be completed by November 1992.

If the benefit-cost ratio included in the study is greater than 1.0, federal interest determined, and a nonfederal sponsor identified, a feasibility study will be initiated in March 1993, with a projected completion date of the study of March 1996.

At the request of SWP contractors, a final proposed solution of the Arroyo Pasajero drainage problem will not be selected until the Corps' examination of the entire watershed is completed. In the meantime, the Department will continue to rely on existing facilities to protect the aqueduct.

### ***Repairs and Modifications***

Table 16, "Repairs and Modifications to Facilities in 1990, by Month," includes information, arranged chronologically, about significant maintenance activities at five power plants, seven pumping plants, and on the California Aqueduct. The table may be found at the end of this chapter.

## ***Independent Reviews***

Information about activities conducted in response to independent reviews by federal agencies and consultants is included in this section.

### ***Federal Agencies***

During July 1991, FERC conducted an exercise for a simulated sudden failure of Lake Almanor

<sup>1</sup>The Department and the USBR have completed a joint environmental impact report/environmental impact statement (EIR/EIS) for the interim procedures. However, USBR will not approve the EIR/EIS for release until liability issues associated with ownership of lands selected for purchase have been resolved.

Dam, a Pacific Gas and Electric (PG&E) facility in the Upper Feather River Area.

The exercise, involving both the Department and PG&E, was designed to coordinate and test responses of operations personnel from the Department, PG&E, and other affected agencies such as the Office of Emergency Services, the Butte County sheriff, the California Highway Patrol, and Butte County's Office of Emergency Services.

### *Consultants*

The Department contracts with professional engineers and geologists who are credentialed experts in their fields. Specifically, consultants:

- Prepare reports for the director of the Department of Water Resources any time a dam undergoes a major modification or a certificate of approval is issued or renewed.
- Review facilities licensed by FERC every five years and prepare a report for review by FERC.
- Every five years review the safety and operational performance of all department dams under jurisdiction of the Division of Safety of Dams.

The Department receives bids from consultants, and only the most qualified are selected, based on geotechnical engineering expertise and knowledge of SWP's facilities.

Information from performance reports prepared by Operations and Maintenance staff members is used to brief consultants, who also review the reports in detail, make physical inspections of and issue independent reports on each facility. The Department prepares action plans based on the consultants' recommendations.

In October 1990 an independent consultants' review board was convened to inspect and report on the safety of four dams, Bethany, Clifton Court Forebay, Del Valle, and Patterson.

The dams were found to be safe for continued use, and the review board made the following recommendations:

*Bethany Dam.* Investigate surface cracking on the crest of Bethany Dam Number One and Two.

*Clifton Court Forebay.* Monitor the seepage areas on the land side of the forebay's embankment.

*Del Valle Dam.* Monitor the abutments with special attention to the potential for changed conditions following periods of excessive rainfall after successive dry years and develop and document rationale supporting the decision not to replace inoperative piezometers at the dam (Del Valle).

Also, inspect the flood control outlet works by underwater video camera at intervals of no more than five years and immediately after a major flood or earthquake (walk-through inspections could be limited to 20-year intervals unless inspections with video cameras indicate the need for earlier inspections).

In May of 1991 an independent consultants' review board was convened to report recommendations for Upper Feather River dams (Antelope, Frenchman, and Grizzly Valley). At the meeting, the board presented the following recommendations:

*Antelope Dam.* Readings of selected observation wells should be discontinued. The installation of strong motion accelerographs was not considered as essential to monitor the safe performance of this facility.

*Frenchman Dam.* Conduit stress cells and the cross-arm device should be deleted from the instrumentation program and the seismoscope should be removed. Hydraulic piezometers should be reviewed to determine their current applicability and dependability.

*Grizzly Valley Dam.* The upstream slope of the dam should continue to be monitored to ensure that the rock fill will provide adequate wave protection. A repetitious annual photographic record of the upstream and downstream faces of the dam should be maintained.

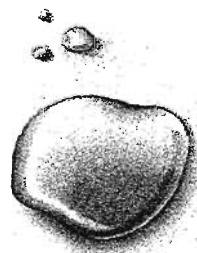
TABLE 16  
**Repairs and Modifications to Facilities in 1990, by Month**

<i>Month</i>	<i>Facility</i>	<i>Description</i>
January 1990	Alamo Generating Plant	Unit 1 out of service from January 1 to February 2 to install turbine mechanical seals.
	California Aqueduct, Mile 56	Out of service for repairs after drilling holes and inserting grout could not repair a large leak. Concrete lining of Pool 10 removed and replaced. Aqueduct back in service July 10.
	Devil Canyon Generating Plant	Unit 1 out of service from January 1 to February 2 to repair brakes.
	Pearblossom Pumping Plant	Units 1, 2, 3, 5, and 6 out of service during January to replace the discharge valve upstream O rings and valves on cooling water intake screen.
	Wheeler Ridge Pumping Plant	Unit 4 out of service from January 1 to August 30 to rewind stator and to repair discharge valve.
	William R. Gianelli Pumping-Generating Plant	Unit 1 out of service from January 1 to February 16 to repair head cover.
	Thermalito Generating Plant	Unit 6 out of service from January 2 to January 18 for to install a new acoustical velocity flow meter. Unit 5 out of service from January 24 to February 3 to replace the O ring on turbine shutoff valve downstream seat.
February 1990	Dos Amigos Pumping Plant	Unit 4 out of service from January 3 to January 12 to remove several poles and repair amortisseur straps.
	California Aqueduct, Pool 15	Pool 15 drawn down to elevation 321.0 to permit construction of a turnout for Panoche Water District at mile 97.46. Cofferdam installed around work area, and water level returned to normal minimum pool elevation of 326 feet. Work completed on turnout and cofferdam removed February 1.
	East Branch, California Aqueduct	East Branch of California Aqueduct opened on February 2 after being closed and drained downstream of Pearblossom Pumping Plant for East Branch Enlargement construction. Section of the Mojave Siphon near Silverwood Lake lined; outlet structure of Pearblossom Pumping Plant modified for addition of two new discharge lines; and San Bernardino Tunnel outlet bifurcation modified to accommodate enlargement of Devil Canyon Power Plant. Also, pools upstream of Pearblossom Pumping Plant lowered for Antelope Valley-East Kern Water Agency to install two new turnouts and to convert two existing turnouts from temporary to permanent.
	Oso Pumping Plant	Unit 8 out of service from February 8 to July 18 to replace impeller.
March 1990	Thermalito Generating Plant	Unit 3 out of service from February 5 to February 16 to replace turbine shut-off valve downstream seat.
	Coastal Branch, California Aqueduct	On March 5 drawdown on Pool 6 of the Coastal Branch, California Aqueduct, started so divers could repair leak in lining. In November, pools 5 and 6 completely drained so maintenance could successfully repair leak in Pool 6 and clean Pool 5. Pools watered up on November 17.
April 1990	Harvey O. Banks Pumping Plant	Unit 7 out of service from April 4 to August 22 to repair impeller.
	William R. Gianelli Pumping-Generating Plant	Unit 3 out of service from April 13 to April 21 to repair an amortisseur strap.
May 1990	William E. Warne Generating Plant	Unit 1 out of service from May 1 to May 30 to install new unions on turbine needle hydraulic supply and return lines.
August 1990	A. D. Edmonston Pumping Plant	Unit 7 out of service from August 10 to November 29 to replace thrust bearing.
	Thermalito Generating Plant	Unit 6 out of service from August 18 to October 28 to install new voltage regulator.
September 1990	Dos Amigos Pumping Plant	Unit 2 out of service from September 5 through end of 1990 for machining of motor shaft and hub.
	Harvey O. Banks Pumping Plant	Unit 5 out of service from September 10 to September 21 to repair oil leak on B Phase high-side bushing.
October 1990	Thermalito Generating Plant	Unit 4 out of service from October 1 to October 26 and Unit 2 out of service from October 27 to November 20 to install new voltage regulator.
	Pearblossom Pumping Plant	Unit 4 out of service from October 9 to November 19 to pull rotor and inspect recent stator rewind.
	Dos Amigos Pumping Plant	Unit 6 out of service from October 23 through end of 1990 for machining of motor shaft and hub.
November 1990	William R. Gianelli Pumping-Generating Plant	Unit 6 out of service from November 6 to November 16 to repair leak in packing box.
	Edward Hyatt Generating Plant	Unit 4 out of service from November 21 to December 11 for impeller cavitation repair and to install new control system.





## 8. *Generating, Buying, and Selling Power*



**T**O DELIVER WATER, THE STATE WATER Project (SWP) needs a dependable, economical source of electric power. Operating as a bulk power agency since 1983, SWP obtains that power from its own facilities and from other utilities.

When obtaining power, the Department of Water Resources takes advantage of the flexibility in operating SWP's energy facilities by buying and selling power on the open market. For example, in total, SWP water facilities consume more power than they produce; and SWP must obtain power from other utilities.

However, because SWP can control the timing of its pumping load, it sells power to other utilities during on-peak periods, usually during the day, and minimizes the cost of power it purchases by maximizing pumping during off-peak periods, usually at night.

By taking advantage of the flexibility in operating its facilities, the Department tries to make the most economical delivery of water to contractors.

Information about the total energy used by SWP as well as information about SWP's sources of power and markets for surplus power is included in this chapter.

### ***Total Energy Used***

In calendar year 1990 the total amount of energy used at SWP's 20 pumping and power plants,

including 0.22 billion kilowatt hours (kWh) in losses due to transmitting energy to SWP plants, was 8.39 billion kWh. That amount is approximately 10 percent more than the amount used in 1989. A 21 percent increase in water deliveries to the Metropolitan Water District of Southern California from 1989 to 1990 was the major reason for the increase in the amount of energy consumed.

Table 17, "Amounts of Energy Used in 1990 and Sources of Energy, by Month," includes information about energy used each month at SWP's 20 pumping and power plants and lost through transmission. Table 17 may be found at the end of this chapter.

According to terms and conditions of various water conveyance contracts and exchange agreements, some water belonging to the Central Valley Project (CVP) is pumped through SWP's Harvey O. Banks Delta Pumping Plant and through the CVP-SWP joint-use facilities at Dos Amigos and Gianelli Pumping-Generating plants. The U.S. Bureau of Reclamation (USBR) furnishes the energy for pumping its water.

Table 18, "Energy Used in 1990 for Pumping at Joint-Use Facilities, by Month," includes information about the total amount of energy used for pumping at each joint-use plant, the energy furnished by USBR, and the derivation of the net energy used by SWP as indicated in Table 17.

Table 18, which may be found at the end of this chapter, also includes information about the

THE  
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derivation of SWP's share of energy generated at Gianelli Pumping-Generating Plant.

## *Energy Produced*

The State Water Project's main power generation resource is the Hyatt-Thermalito power complex located in Oroville, California, and operated by the Oroville Field Division.

In 1990, 1.52 billion kilowatt-hours (kWh) of energy was generated at Hyatt-Thermalito. That amount was approximately 20 percent more than the amount generated in 1989. However, as a result of lower-than-normal rainfall in the Feather River watershed during calendar year 1990, the output of Hyatt-Thermalito was substantially less than the estimated average annual output of 2.2 billion kWh.

Energy generation at SWP's aqueduct recovery plants, Alamo, Castaic, Devil Canyon, Gianelli, and Warne, totaled about 1.85 billion kWh in 1990, about 19 percent higher than the amount generated in 1989. In 1990 Bottle Rock Powerplant provided 0.058 billion kWh; and Reid Gardner Unit No. 4 supplied 1.45 billion kWh in 1990.

## *Energy Purchased*

The State Water Project purchases energy from other utilities through long-term contracts and short-term purchases. In 1990, the Department purchased 2.51 billion kWh of energy at a cost of \$60.34 million. Associated costs for transmission, energy losses, and dispatching services totaled \$14.95 million.

Other SWP purchases, including costs for royalty payments for steam fields at Bottle Rock Powerplant and the debt service at Pine Flat Powerplant, totaled \$9.92 million. Table 19, "Amounts of Power and Transmission Services Purchased in 1990 and Costs of Purchases," includes specific information about those costs. The table may be found at the end of this chapter.

Information about energy obtained through long-term contracts and short-term purchases follows.

### *Long-Term Contracts*

Long-term SWP hydroelectric power resources are obtained through contracts with the Kings River Conservation District (KRCD), Los Angeles Department of Water and Power (LADWP), and the Metropolitan Water District of Southern California (MWDSC).

According to terms of the KRCD contract, the Department receives the total output of the 165-megawatt (MW) Pine Flat Powerplant. The plant furnished 0.08 billion kWh to SWP in 1990.

Through a cooperative development agreement with LADWP, the Department receives energy in amounts based on the amount of water scheduled weekly through Castaic Pumping Plant. In 1990, 0.77 billion kWh was provided to the Department.

As part of the MWDSC contract, the Department receives energy from five small hydroelectric power plants on the MWDSC system (30 MW total capacity). A total of 0.22 billion kWh was received in 1990.

The Department also has an exchange agreement with the Southern California Edison Company (SCE). According to terms of the 1979 power contract between the Department and SCE (in effect since April 1983), part of the output of the Hyatt-Thermalito complex and all output of Alamo and Devil Canyon power plants are delivered to SCE.

Generally, the energy is delivered during on-peak periods, and a greater amount is returned to the Department during off-peak periods. The additional energy is primarily considered to be payment for the generating capacity made available to SCE.

According to terms of the 1981 capacity exchange agreement with SCE (in effect since April 1987), the Department delivers energy to SCE each year during on-peak periods and in return, receives a greater amount of off-peak energy. Those two

exchange agreements provided SWP with a net of about 1.88 billion kWh in 1990.

The Department also has a contract with TERA Power Corporation for the purchase of energy produced at Bethany Wind Park, near the South Bay Pumping Plant. About 45 wind turbines were operational at the end of 1990, providing about .004 billion kWh of wind-generated energy during the year.

Table 17 includes information about the monthly quantities of energy delivered and returned under those contracts. The net gain to SWP during 1990 was 2.95 billion kWh. See "Energy Sources from Long-Term Agreements" in Table 17 for additional information.

### ***Short-Term Purchases***

Existing resources and long-term power and transmission contracts ensure that SWP has enough power to meet long-term needs. If SWP's power requirements exceed resources at a specific point in time, short-term purchases are made to meet the difference.

In 1990 SWP purchased short-term energy from 17 utilities. The total amount of short-term energy purchases was 2.23 billion kWh. For additional information, see "Purchases" in Table 17.

### ***Power Sold***

When generation from SWP's power resources exceeds requirements, the Department sells this excess power on the market. Currently, the Department has contracts with approximately 30 utilities. Through these contracts, the Department sells excess capacity and energy at points of delivery accessible to both parties. The Department sells excess capacity and energy on a short-term basis at market rates.

In determining the most advantageous time to sell power, the Department considers projected

SWP operations and changes in the power market as well as energy losses and transmission and dispatching costs.

Total energy sold to 19 utilities in 1990 was 1.44 billion kWh, which resulted in revenues of \$35.35 million. The Department also received a total of \$15.11 million in revenues for peaking capacity payments or transmission sales from the following utilities:

City of Anaheim  
(Peaking capacity)  
City of Azusa  
(Peaking capacity)  
City of Banning  
(Peaking capacity)  
City of Colton  
(Peaking capacity)  
Los Angeles Department of Water and Power  
(Peaking capacity foregone)  
Modesto Irrigation District  
(Peaking capacity)  
Nevada Power Company  
(Peaking capacity)  
Northern California Power Agency  
(Transmission payments)  
City of Riverside  
(Peaking capacity)  
City of Santa Clara  
(Transmission payments)  
Southern California Edison  
(Peaking capacity and transmission payments)  
Turlock Irrigation District  
(Peaking capacity)  
City of Vernon  
(Peaking capacity)

Information about the amount of energy sold and the revenue received may be found in Table 20, "Total Amounts of Energy Sold in 1990 and Revenue from Sales," at the end of this chapter.

TABLE 17  
Amounts of Energy Used in 1990 and Sources of Energy, by Month  
(Millions of kilowatt-hours)

Energy Used and Sources of Energy	Month												Total
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	
<b>Energy Used by Pumping and Power Plants</b>													
A. D. Edmonston Pumping Plant	245.33	336.88	375.02	316.93	266.95	265.22	337.23	378.76	375.78	367.90	280.70	200.94	3,747.84
Alamo Power Plant (Station service)	0.06	0.00	0.00	0.00	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.02	0.14
Badger Hill Pumping Plant	0.29	1.24	1.80	2.39	3.79	4.24	4.80	2.93	1.21	1.28	0.67	1.46	26.10
Barker Slough Pumping Plant	0.28	0.22	0.28	0.42	0.43	0.59	0.66	0.68	0.67	0.59	0.67	0.46	5.95
Buena Vista Pumping Plant	26.90	39.56	45.12	37.16	33.69	36.10	45.33	47.40	42.23	41.01	30.95	23.34	448.79
Chrisman Pumping Plant	69.31	95.13	105.77	90.04	76.42	76.02	96.79	108.55	106.90	103.83	79.65	57.38	1,065.79
Cordelia Pumping Plant	0.70	0.49	0.65	0.88	1.00	1.25	1.41	1.41	1.29	1.22	0.98	0.85	12.13
Del Valle Pumping Plant	0.04	0.27	0.14	0.07	0.11	0.06	0.01	0.01	0.01	0.00	0.01	0.02	0.75
Devil Canyon Power plant (Station service)	0.13	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
Dos Amigos Pumping Plant (SWP share)	26.11	26.82	29.85	27.92	26.28	40.82	52.66	40.21	27.78	26.59	19.74	18.73	363.51
Gianelli Pumping-Generating Plant (SWP share)	59.58	46.59	55.38	38.11	0.57	0.15	0.19	0.41	0.44	0.37	0.93	7.37	210.09
Harvey O. Banks Delta Pumping Plant	116.07	104.73	115.83	92.21	6.82	6.27	34.57	55.82	33.23	23.68	33.06	41.47	683.76
Hyatt-Thermalito (Pumpback and station service)	30.12	54.54	37.41	0.03	34.73	53.90	26.94	0.11	0.15	0.19	0.20	0.11	238.43
Las Perillas Pumping Plant	0.14	0.41	0.69	0.90	1.40	1.55	1.77	1.11	0.47	0.49	0.26	0.56	9.75
Pearlblossom Pumping Plant	0.30	43.94	38.94	51.80	45.99	49.89	53.06	50.87	48.04	45.91	48.54	33.55	510.83
Oso Pumping Plant	28.65	21.82	28.18	15.72	12.28	10.00	16.85	22.49	23.58	24.32	13.71	9.94	227.34
South Bay Pumping Plant	10.27	13.43	15.49	15.31	15.79	14.57	15.39	15.43	12.71	11.70	13.04	12.86	165.99
Wheeler Ridge Pumping Plant	30.24	41.42	47.11	39.96	34.64	34.73	43.85	48.16	47.07	46.12	34.91	25.55	473.76
William E. Warne Powerplant (Station service)	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.10	0.18
<b>Subtotal</b>	<b>644.52</b>	<b>827.50</b>	<b>897.66</b>	<b>729.88</b>	<b>562.90</b>	<b>595.38</b>	<b>731.32</b>	<b>774.36</b>	<b>721.57</b>	<b>695.20</b>	<b>558.07</b>	<b>432.71</b>	<b>8,171.07</b>
Scheduled High Voltage Transmission Line Losses	8.81	10.12	25.29	23.94	15.35	11.11	15.99	23.49	23.08	22.10	21.59	15.83	216.70
<b>Total Energy Required</b>	<b>653.33</b>	<b>837.62</b>	<b>922.95</b>	<b>753.82</b>	<b>578.25</b>	<b>606.49</b>	<b>747.31</b>	<b>797.85</b>	<b>744.65</b>	<b>717.30</b>	<b>579.66</b>	<b>448.54</b>	<b>8,387.77</b>
<b>SWP Energy Sources</b>													
Alamo Powerplant	0.00	2.58	2.78	2.91	2.54	1.84	2.54	2.70	2.56	2.95	2.88	1.92	28.20
Bottle Rock Powerplant	6.29	6.35	9.42	7.95	6.24	6.73	6.03	5.89	2.12	(0.18)	(0.16)	(0.19)	56.49
Devil Canyon Powerplant	0.00	54.88	71.20	85.89	79.18	79.71	91.89	83.21	80.63	87.95	78.00	60.94	853.48
Gianelli Pumping-Generating Plant (SWP share)	0.00	(0.11)	0.00	1.64	53.60	66.35	56.28	19.77	13.22	17.35	6.42	2.81	237.33
Hyatt-Thermalito Powerplant	117.73	84.18	107.93	260.02	176.89	134.45	189.07	174.74	54.55	48.76	44.91	123.94	1,515.17
Reid Gardner Unit No. 4	124.48	131.18	159.78	(1.74)	(1.51)	90.14	170.07	149.04	162.56	149.50	143.04	170.64	1,447.16
William E. Warne Powerplant	56.74	45.22	56.60	33.05	26.69	22.28	34.44	46.78	47.91	50.85	27.49	19.86	467.71
<b>Energy Sources from Short-Term Agreements</b>													
Bonneville Power Administration, Power Exchange	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.39	0.00	(7.39)	0.00	0.00	0.00
Northern California Power Agency, Power Exchange	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.02)	0.00	0.00	0.00	(0.02)
San Bernardino Valley Municipal Water District - Southern California Edison (SCE) Exchange	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(1.09)	(1.47)	0.00	0.00	(2.56)
<b>Energy Sources from Long-Term Agreements</b>													
Castaic Power Plant	99.00	73.14	97.27	54.61	39.03	32.09	56.41	81.51	79.96	78.23	43.00	32.45	766.70
Metropolitan Water District of Southern California Hydroelectric Plants	14.16	12.57	18.30	15.93	20.06	20.97	20.73	18.77	18.94	18.85	19.31	20.54	219.13
Pine Flat Powerplant	(0.26)	(0.23)	3.73	2.88	0.63	49.58	21.62	(0.17)	(0.19)	(0.16)	(0.23)	(0.26)	76.94
Power Exchange Delivered to SCE	(91.20)	(132.29)	(180.25)	(237.54)	(210.22)	(203.43)	(231.05)	(218.28)	(147.32)	(163.38)	(145.89)	(158.14)	(2,098.99)
Power Exchange Received from SCE	431.61	448.00	435.23	299.02	334.07	253.79	299.26	313.48	280.22	225.77	199.02	460.52	3,979.97
TERA Power Corporation	0.01	0.06	0.25	0.40	0.43	0.67	0.61	0.45	0.48	0.15	0.06	0.00	3.57
Power System Deviations Account Transactions	3.45	0.49	(4.12)	(2.28)	(0.56)	1.84	1.53	0.88	0.48	0.79	0.17	(2.00)	0.67
<b>Purchases</b>													
Arizona Public Service Company	0.00	3.39	1.78	5.05	0.00	0.00	0.00	6.23	22.41	9.69	1.15	1.26	50.96
Bonneville Power Administration	0.00	22.37	115.28	135.49	93.97	124.28	50.00	0.51	0.00	0.00	2.10	31.89	575.89
British Columbia Power Export Corporation	0.00	0.00	0.00	0.00	6.81	0.00	69.26	68.40	116.48	130.79	115.36	1.40	508.50
El Paso Electric Company	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.00	0.87
Eugene Water and Electric Board	1.34	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61
Idaho Power Company	3.25	0.00	0.00	0.00	0.00	0.00	0.00	2.77	0.00	0.00	0.00	0.00	6.02
Los Angeles Department of Water and Power	0.00	0.00	0.00	0.94	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54
Montana Power Company	1.87	65.25	15.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	88.39
Northern California Power Agency	0.00	0.21	1.51	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.55
Pacific Gas and Electric Company	0.00	3.27	0.00	0.00	0.00	0.00	0.00	23.56	24.05	32.95	2.98	0.00	86.81
Pacific Power and Light Company	3.60	0.00	10.01	24.21	2.76	0.00	0.09	3.68	0.00	8.31	2.53	28.00	83.19
Portland General Electric Company	0.00	0.00	1.13	9.30	10.40	21.62	14.60	0.00	2.84	1.20	0.00	0.00	51.09
Puget Sound Power and Light Company	0.00	0.50	33.47	1.80	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	35.87
Salt River Agricultural Improvement and Power District	8.71	11.93	6.57	80.56	23.94	16.85	3.82	26.41	6.95	29.55	21.98	12.02	249.29
Seattle City Light	0.00	0.00	0.00	21.19	1.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.51
Washington Water Power Company	15.82	38.06	0.00	0.46	29.86	66.33	55.20	56.42	52.63	55.35	54.58	0.00	424.73
Western Area Power Administration, Lower Colorado	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.75	3.91	7.00	0.00	2.67	27.33
<b>Subtotal</b>	<b>796.58</b>	<b>871.00</b>	<b>983.91</b>	<b>802.59</b>	<b>696.73</b>	<b>786.09</b>	<b>912.40</b>	<b>887.87</b>	<b>825.15</b>	<b>781.21</b>	<b>618.80</b>	<b>815.77</b>	<b>9,778.10</b>
<b>Less Sales</b>	<b>(143.25)</b>	<b>(33.38)</b>	<b>(60.96)</b>	<b>(48.77)</b>	<b>(118.48)</b>	<b>(179.60)</b>	<b>(165.09)</b>	<b>(90.02)</b>	<b>(80.50)</b>	<b>(63.91)</b>	<b>(39.14)</b>	<b>(367.23)</b>	<b>(1,390.33)</b>
<b>Total Energy Provided to SWP</b>	<b>653.33</b>	<b>837.62</b>	<b>922.95</b>	<b>753.82</b>	<b>578.25</b>	<b>606.49</b>	<b>747.31</b>	<b>797.85</b>	<b>744.65</b>	<b>717.30</b>	<b>579.66</b>	<b>448.54</b>	<b>8,387.77</b>

TABLE 18  
**Energy Used in 1990 for Pumping at Joint-Use Facilities, by Month**  
(Millions of kilowatt-hours)

Name of Facility and Use	Month												Total
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	
<b>Harvey O. Banks Delta Pumping Plant</b>													
Energy Metered	116.07	104.73	115.83	92.21	6.82	6.27	45.17	62.33	44.20	41.83	39.23	50.02	724.71
Less Energy Scheduled by U. S. Bureau of Reclamation (USBR) for Central Valley Project (CVP)	0.00	0.00	0.00	0.00	0.00	0.00	(10.60)	(6.51)	(10.97)	(18.14)	(6.17)	(8.55)	(60.94)
Energy Used for SWP Pumping	116.07	104.73	115.83	92.21	6.82	6.27	34.57	55.82	33.23	23.69	33.06	41.47	663.77
<b>Dos Amigos Pumping Plant</b>													
Energy Metered	35.04	49.67	44.16	38.41	43.61	63.36	78.68	52.63	28.67	27.54	21.72	18.71	502.20
Less Energy Scheduled by USBR for CVP Pumping	(8.94)	(22.85)	(14.32)	(10.49)	(15.33)	(22.53)	(26.02)	(12.41)	(0.89)	(0.95)	(1.98)	(1.98)	(138.69)
Less Energy Scheduled by USBR for Station Service	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	26.10	26.82	29.84	27.92	28.28	40.83	52.66	40.22	27.78	26.59	19.74	16.73	363.51
<b>Gianelli Pumping-Generating Plant (Generating)</b>													
Energy Metered	0.00	5.18	0.00	1.64	76.29	109.92	90.81	36.54	13.22	20.71	6.42	2.81	363.54
Less Energy Scheduled by USBR for CVP Pumping	0.00	(5.28)	0.00	0.00	(22.69)	(43.57)	(34.53)	(16.77)	0.00	(3.36)	0.00	0.00	(126.20)
SWP Share of Energy Generated	0.00	(0.10)	0.00	1.64	53.60	66.35	56.28	19.77	13.22	17.35	6.42	2.81	237.34
<b>Gianelli Pumping-Generating Plant (Pumping)</b>													
Energy Metered	111.27	46.83	74.29	68.14	0.86	3.69	0.27	6.18	22.33	3.91	13.74	36.05	387.56
Less Energy Scheduled by USBR for CVP Pumping	(51.62)	0.00	(18.65)	(29.79)	0.00	(3.41)	0.00	(5.47)	(21.67)	(3.18)	(12.46)	(28.24)	(174.49)
Less Energy Scheduled by USBR for Station Service	(0.06)	(0.24)	(0.26)	(0.24)	(0.29)	(0.14)	(0.08)	(0.29)	(0.22)	(0.36)	(0.35)	(0.44)	(2.97)
Energy Used for SWP Pumping	59.59	46.59	55.38	38.11	0.57	0.14	0.19	0.42	0.44	0.37	0.93	7.37	210.10
<b>Las Perillas Pumping Plant</b>													
Energy Metered	0.14	0.48	0.69	0.90	1.40	1.55	1.77	1.11	0.47	0.49	0.26	0.56	9.82
Less Energy Scheduled by USBR for CVP Pumping	0.00	(0.07)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.07)
Energy Used for SWP Pumping	0.14	0.41	0.69	0.90	1.40	1.55	1.77	1.11	0.47	0.49	0.26	0.56	9.75

TABLE 19  
Amounts of Power and Transmission Services Purchased in 1990 and Costs of Purchases

<i>Name of Supplier</i>	<i>Type of Service Purchased</i>	<i>Energy (kWh)</i>	<i>Energy Cost (Dollars)</i>	<i>Transmission Cost (Dollars)</i>	<i>Total Cost (Dollars)</i>
<b>Power and Transmission Purchases</b>					
Arizona Public Service Company	Nonfirm energy	50,945,000	1,128,335		1,128,335
Bonneville Power Administration	Firm and nonfirm energy	575,884,000	10,659,301		10,659,301
British Columbia Power Export Corporation	Firm and nonfirm energy and capacity	508,416,000	12,075,517	1,782,339	13,857,856
El Paso Electric Company	Nonfirm energy	865,000	21,035		21,035
Eugene Water and Electric Board	Nonfirm energy	1,611,000	42,921		42,921
Idaho Power Company	Nonfirm energy	5,972,000	177,000		177,000
Kings River Conservation District	Hydroelectric energy	80,061,264	615,061		615,061
Los Angeles Department of Water and Power	Nonfirm energy, transmission	1,540,000	33,214	151,403	184,617
Metropolitan Water District of Southern California	Hydroelectric energy	196,125,600	8,080,375		8,080,375
Montana Power Company	Nonfirm energy	88,390,000	2,647,960		2,647,960
Nevada Power Company	Transmission			1,624,644	1,624,644
Northern California Power Agency	Nonfirm energy	2,545,000	55,540		55,540
Pacific Gas and Electric Company	Firm and nonfirm energy, capacity and transmission	86,794,000	2,837,283	6,948,734	9,786,017
Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company	EHV transmission			1,500,000	1,500,000
Pacific Power and Light Company	Nonfirm energy	83,198,000	1,946,994		1,946,994
Portland General Electric Company	Firm and nonfirm energy and return storage	61,082,000	1,058,611		1,058,611
Puget Sound Power and Light Company	Nonfirm energy	35,872,000	731,390		731,390
Salt River Agricultural Improvement and Power District	Nonfirm energy	249,280,000	5,236,276		5,236,276
Seattle City Light	Nonfirm energy	22,514,000	471,797		471,797
Southern California Edison Company	Capacity and transmission			2,939,719	2,939,719
TERA Power Corporation	Wind energy	3,587,544	306,062		306,062
Washington Water Power Company	Nonfirm energy	424,735,000	11,774,873		11,774,873
Western Area Power Administration, Lower Colorado	Nonfirm energy	27,330,000	508,965		508,965
<b>Subtotal</b>		<b>2,506,747,408</b>	<b>60,408,510</b>	<b>14,946,839</b>	<b>75,355,349</b>
<b>Other Purchases</b>					
Coleman Partnership and Fluid Energy Corporation	Bottle Rock steam field royalty payments				100,242
Kings River Conservation District	Pine Flat operation and maintenance				2,545,855
	Pine Flat debt service				5,330,751
Northern California Power Agency	Bottle Rock steam field drilling operation				1,703,964
Pacific Gas and Electric Company	Bottle Rock transmission and operations and maintenance				224,523
	Pine Flat transmission facilities ownership				15,071
<b>Subtotal</b>					<b>9,920,406</b>
<b>Total</b>					<b>85,275,755</b>



TABLE 20  
Total Amounts of Energy Sold in 1990 and Revenue from Sales

<i>Name of Purchaser</i>	<i>Amount of Energy Sold (Kilowatt-hours)</i>	<i>Revenue from Energy Sales (Dollars)</i>	<i>Revenue from Capacity and Transmission Sales (Dollars)</i>	<i>Total Power Sales (Dollars)</i>
City of Anaheim	36,199,000	960,565	1,139,400	2,099,965
City of Azusa	18,326,000	485,639	424,800	910,439
City of Banning	5,752,000	152,428	189,900	342,328
City of Colton	20,517,000	543,701	480,840	1,024,541
Los Angeles Department of Water and Power			696,100	696,100
Modesto Irrigation District	245,161,000	6,342,732	877,500	7,220,232
Nevada Power Company	235,003,000	6,027,768	2,599,932	8,627,700
Northern California Power Agency	17,538,000	454,710	277,949	732,659
Pacific Gas and Electric Company	110,031,000	2,186,465		2,186,465
Portland General Electric	1,200,000	24,000		24,000
Puget Sound Power and Light Company	15,107,000	425,504		425,504
City of Riverside	37,384,000	983,537	759,600	1,743,137
Sacramento Municipal Utility District	59,049,000	1,325,319		1,325,319
Salt River Agricultural Improvement and Power District	5,910,000	163,980		163,980
San Diego Gas & Electric Company	250,000	6,000		6,000
City of Santa Clara			39,679	39,679
Southern California Edison (a)	157,033,000	2,861,353	1,058,132	3,919,484
Turlock Irrigation District	171,064,000	4,266,943	1,770,000	6,036,943
City of Vernon	302,778,000	8,143,412	4,800,000	12,943,412
<b>Total</b>	<b>1,438,302,000</b>	<b>\$35,354,056</b>	<b>\$15,113,832</b>	<b>\$50,467,887</b>

a) In addition to amounts listed, total value of 2,560,000 kWh of energy delivered to SCE according to the generation replacement agreement with the Department is \$67,101. The Department delivered that energy to replace generation lost because of water diverted from Santa Ana and Mill Creek by San Bernardino Valley Municipal Water District.





## *Part III.*

# *Ensuring Environmental Quality*

<b>9. Reviewing Environmental Regulations</b>	77	Special Flood Control Program	88
Legislation	77	Protection of Towns	88
Environmental Policy Acts	78	Implementation	89
Endangered Species Acts	78	Levee Rehabilitation	89
Water Pollution Control Act	79	Encroachment Documentation	89
Public Trust Doctrine	79	Subsidence Investigations	89
		Upland Relocation	90
		Elevation Verification	90
		Levee Upgrades	90
<b>10. Preserving Delta Resources</b>	81		
Federal Agencies	81	<b>12. Monitoring Water Quality</b>	93
U. S. Corps of Engineers	82	Delta Activities	93
U. S. Bureau of Reclamation	82	Decision 1485 Standards	94
State Agencies	82	Outflow and Export Standards	94
State Water Resources Control Board	82	Water Quality Standards	94
Composition and Duties	83	Phytoplankton Distribution	95
Bay-Delta Hearings	83	Special Delta Surveys	95
Department of Fish and Game	84	Aquatic Plant Communities	95
		Asiatic Clam Survey	95
<b>11. Managing Delta Resources</b>	85	Fish and Agricultural Protections	96
North Delta Program	85	Old River Barrier	96
Environmental Review Documents	85	Middle River Barrier	96
Review Phases	85	Activities Outside the Delta	96
South Delta Program	86	Water Quality Standards	96
Proposals	86	Temperature Studies	97
Review Period	87	Suisun Marsh Protection Plan	97
West Delta Program	87	Preservation Act	98
Investigations	87		
Alternatives	88		

Decision 1485 Standards	98
Preservation Agreement	98
Salinity Control Project	99
San Joaquin Valley Drainage Program	99
Data Collection	100
Drainage Reduction	100
Drainage Treatment	100
Evaporation Ponds	101

### **13. Protecting Fish, Plants, and Wildlife** 103

Case-by-Case Reviews	103
Mitigations	104
Assessments	104
Chinook Salmon	104
Delta Smelt	104
Offset for Losses	104
Pumping Plant Agreement	105
Funded Activities	105
Additional Negotiations	105
Plants and Wildlife	106

## 9. Reviewing Environmental Regulations



**B**EFORE 1960, THE ENVIRONMENTAL impacts of damming rivers and conducting related activities necessary to store and deliver water were, at times, not fully considered. In the late 1960s, however, perceptions changed. Water came to be viewed as a common resource to be shared by all users. And increasingly, water, along with other natural resources, came to be seen as part of a larger ecosystem that deserved to be protected.

As a result, state and federal legislators enacted many laws designed to protect the environment. Some of the most comprehensive include:

- National Environmental Policy Act (Title 42, *United States Code* sections 4321-4370 [1969])
- Federal Endangered Species Act (Title 16, *United States Code* sections 1531-1544 [1973])
- Section 404 of the Federal Water Pollution Control Act (Title 33, *United States Code* Section 1344 [1977])
- California Environmental Quality Act (*Public Resources Code* sections 21000-21117 [1970])
- California State Endangered Species Act (*Fish and Game Code* sections 2050-2068 [1984])

In addition, when making administrative decisions affecting water and when issuing water rights

permits, agencies are mandated to consider the use of water as a habitat for fish, wildlife, and plants as well as for recreational purposes and as a source of aesthetic pleasure.

The authority for agencies to consider those uses is the public trust doctrine, an outgrowth of the landmark decision in *National Audubon Society v. Superior Court of Alpine County* (1983). Some legal scholars contend that of all environmental laws and regulations, the public trust doctrine has the potential to most seriously affect the ways in which water is used in California.

When the Department of Water Resources plans and implements programs related to the State Water Project (SWP), it takes into account the appropriate environmental laws and doctrines, particularly those listed in the previous paragraphs. A basic understanding of those laws and doctrines is likely to facilitate an understanding of the Department's complex environmental management activities; therefore, information about these laws is included in this chapter. The descriptions are organized in two categories, "Legislation" and "Public Trust Doctrine."

### Legislation

Information about the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), Federal Endangered Species

WHEN  
MAKING  
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AFFECTING  
WATER,  
AGENCIES  
MUST  
CONSIDER  
THE USE OF  
WATER AS A  
HABITAT FOR  
FISH, WILDLIFE,  
AND PLANTS  
AS WELL AS  
FOR  
RECREATIONAL  
PURPOSES  
AND AS A  
SOURCE OF  
AESTHETIC  
PLEASURE.

Act, California State Endangered Species Act, and Section 404 of the Federal Water Pollution Control Act is included in this section.

### ***Environmental Policy Acts***

The National Environmental Policy Act mandates the federal government to use all practicable means consistent with other considerations of national policy to protect and enhance the quality of the environment. All federal agencies must prepare an environmental impact statement (EIS) for actions significantly affecting environmental quality.

California's Environmental Quality Act is one of the first state environmental assessment acts patterned after the National Environmental Policy Act. According to CEQA, agencies are required to (1) disclose, through an environmental impact report (EIR), the significant effects proposed projects would have on the environment; and (2) search for ways to reduce or avoid the environmental damage. Through the environmental review process, citizens have an opportunity to learn about those significant effects and if the project is approved, the reasons for approving the project.

The procedures involved in the environmental review process require agencies to:

1. Provide a description of the proposed project.
2. Identify the lead and cooperating agencies involved in the project.
3. Determine the scope of study with public and governmental agency participation.
4. Prepare and distribute a draft EIS or EIR.
5. Conduct a public hearing to receive comments on the draft.
6. Prepare the final EIS or EIR.
7. If the project is approved, prepare and file applications for permits required to implement the project.

The Department follows those procedures when it considers the environmental impacts that could

result from certain decisions it makes concerning SWP.<sup>1</sup>

Of all procedures conducted by agencies, the scoping phase is particularly important. Occurring early in the review process, the scoping phase provides the public and governmental agencies with an opportunity to identify the issues and topics to be considered in the draft environmental impact statement or report. That information is essential to agencies because they depend on the information they receive to identify and evaluate responsible alternatives and to identify potential environmental and socioeconomic impacts of the project.

Consequently, participants have the responsibility to raise issues during the scoping phase and not just after the draft environmental document is prepared. If questions are raised late in the review process, time may not be available to give those questions the same consideration as those raised earlier. In addition, the scoping phase helps agencies to determine data and information still needed, develop a work schedule, and allocate resources for preparing and distributing the draft environmental document for public review and comment.

### ***Endangered Species Acts***

In planning for and operating the State Water Project, the Department must consider the effects its actions will have on organisms—plants, birds, reptiles, fish, and mammals—listed as threatened or endangered according to the Federal Endangered Species Act and the California State Endangered Species Act. An endangered species is one in danger of extinction in all or a significant portion of its range; a threatened species is one that is likely to become endangered.

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<sup>1</sup>CEQA applies only to projects sponsored by state agencies. Federal agencies are required to follow NEPA. The Department operates many projects in cooperation with the federal government. In those cases the environmental review process specified in both CEQA and NEPA must be followed.

The acts are designed to protect threatened and endangered species by:

1. Listing endangered and threatened species
2. Ensuring federal and state agencies adopt measures to protect the species during the design and construction of the project
3. Prohibiting the taking of endangered species

One important aspect of the acts is preserving habitat that is critical to the survival of the threatened or endangered species.

### ***Water Pollution Control Act***

Section 404 of the Federal Water Pollution Control Act (Clean Water Act) requires a permit from the U.S. Corps of Engineers for any activity that results in disposal of dredged material or placement of fill material in the waters of the United States.

On the surface, that requirement may seem simple. However, the Federal Water Pollution Control Act, including Section 404, has been broadly interpreted by the federal courts to include its application to structures or fills introduced into U.S. bodies of water. Moreover, Section 404 applies to all interstate waters and waters within a state that may be used for interstate or foreign commerce. Those waters include those from which fish may be taken and sold in interstate commerce and waters that:

1. Interstate travelers may use for recreation.
2. Could be used for industrial purposes by industries in interstate commerce.

In essence, Section 404 may apply to virtually all significant bodies of water within a state.

### ***Public Trust Doctrine***

In its 1983 decision in *National Audubon Society v. Superior Court of Alpine County*, the California Supreme Court first clarified the scope of the public trust doctrine. According to the doctrine, the state holds navigable waters and their underlying lands in trusts to protect public interest.

The interests historically protected were commerce, navigation, and fisheries. Courts later expanded the doctrine to protect the public's stake in recreation, fish and wildlife habitats, scenic values, and environmental preservation.

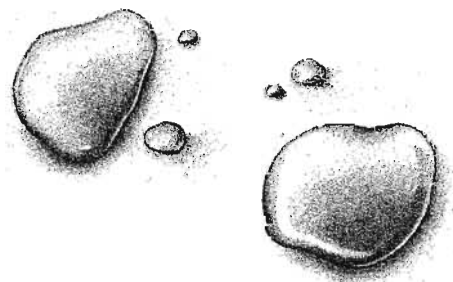
In the *Audubon* case, the Supreme Court held that:

- Water rights licenses are subject to the public trust doctrine.
- When issuing water rights permits, the state must consider public trust values.
- The state has a continuing duty to supervise and reorder existing water rights.

Many observers of water management policies have indicated that changes in environmental laws are likely to come about as a result of lawsuits filed on the basis of the public trust doctrine.



# 10. Preserving Delta Resources



**P**ERHAPS NO AREA IN CALIFORNIA'S WATER history has been the subject of more investigations or generated more controversy than has the Sacramento-San Joaquin Delta, 738,000 acres of land interlaced with hundreds of miles of waterways.

Natural runoff and flood flows from the Sacramento, San Joaquin, Mokelumne, and Cosumnes rivers flow into the Delta, which receives runoff from 40 percent of the state's land area.

With its concentrated supply of water, the Delta supports hundreds of species of fish, wildlife, and plants. And as part of an interconnected estuary system that includes the Suisun Marsh and San Francisco Bay, the Delta serves as a passageway to and from the Pacific Ocean for migrating fish. Many crops are grown in the Delta, and it also serves as one of California's largest recreational areas.

The Delta also serves as part of a large system designed to export water from the northern part of the state to at least 20 million Californians in the western and southern parts.

The Delta's channels have been used by the Central Valley Project (CVP) since 1951 and the State Water Project (SWP) since 1968 to transport water from upstream reservoirs to its southern boundary, where pumps put the water into the Delta-Mendota Canal and California Aqueduct for distribution south and west. The State Water

Project also exports water from Barker Slough in the northern Delta into the North Bay Aqueduct.

Over the past 40 years, various federal and state agencies, including the Department of Water Resources, have participated in developing and implementing various programs designed to preserve the Delta as a unique environmental resource. Many of those programs involve:

- Defining water rights
- Determining the levels of salinity acceptable for fish and wildlife habitation
- Devising various methods to control flooding, protect fish and wildlife, and provide for recreational activities

In addition to the Department, agencies particularly active in managing Delta resources are the U.S. Corps of Engineers, U.S. Bureau of Reclamation, the State Water Resources Control Board, and the California Department of Fish and Game.

Information about their activities is included in this chapter, arranged according to the headings "Federal Agencies" and "State Agencies." Information about the Department's activities may be found in Chapter 11, "Managing Delta Resources."

## *Federal Agencies*

Information about the activities of the U.S. Corps of Engineers and the U.S. Bureau of Reclamation may be found in the following paragraphs.

PERHAPS NO AREA IN CALIFORNIA'S WATER HISTORY HAS BEEN THE SUBJECT OF MORE INVESTIGATIONS OR GENERATED MORE CONTROVERSY THAN HAS THE SACRAMENTO-SAN JOAQUIN DELTA.



## ***U.S. Corps of Engineers***

Part of the U.S. Army, the U.S. Corps of Engineers is responsible for setting rules for flood control in the Delta and issuing permits for activities on navigable waters and wetlands according to Section 10 of the Rivers and Harbors Act (Title 33, *United States Code* Section 403 [1899]); the Federal Water Pollution Control Act (Clean Water Act, Title 33, *United States Code* Section 1344 [1977]); and Section 103 of the Marine Protection, Research, and Sanctuaries Act (Title 33, *United States Code* Section 1413 [1972]).

In October 1982 the Corps completed a draft feasibility report and draft environmental impact statement in which the issues of floods; deterioration of levees; intrusion of salinity; needs of wildlife; and requirements for recreational facilities in the Delta were examined. Since that time, the Department has been closely coordinating its Delta planning programs with the Corps as it updates and finalizes its report.

By May 1990 a draft feasibility cost-sharing agreement for completing the study had been drafted in anticipation of resuming work in July 1990. However, at a technical review conference in May 1990, the Corps decided to review its role in the Delta.

After about a year of analysis and discussion between the Corps, the Department, and other interested parties, the Corps and Department again agreed to move forward with a special feasibility-level study for the Sacramento-San Joaquin Delta. A revised draft feasibility cost sharing agreement was completed in May 1991, signed on May 19, 1991, and formally initiated on September 5, 1991.

According to terms of the agreement, the study is managed by an executive committee, whose members also provide policy direction. A study management team oversees and coordinates the day-to-day activities of the study. The Department of Water Resources and the State Reclamation Board represent the state of California.

The study is organized in two phases. Phase one is expected to be completed by March 1993; and

findings from the study will be included in a report on the problems and potential solutions involved in a long-term management strategy for protecting Delta resources. The report will include information on the cost-effective features of the project to be examined in detail during phase two of the study.

Phase two, scheduled to begin in 1993 and last about four years, will include analyses of alternatives and a recommended plan of action. In addition, the results of the study will include a feasibility report and an environmental impact statement.

The study program could eventually result in a federal flood control project in the Delta, which would also incorporate many aspects of the Department's planning programs for the Delta.

## ***U.S. Bureau of Reclamation***

The U.S. Bureau of Reclamation (USBR) manages the operation of the Central Valley Project (CVP), which shares responsibilities for water quality in the Delta with SWP.

The Central Valley Project, started during the Great Depression, delivers about eight million acre-feet of water a year to contractors in the Sacramento and San Joaquin valleys and Contra Costa and Santa Clara counties and approximately five million acre-feet to contractors in San Joaquin County.

Because the Department and USBR share responsibilities in the Delta, the Department closely coordinates SWP's operation with USBR.

## ***State Agencies***

This section includes information on the State Water Resources Control Board and the California Department of Fish and Game.

### ***State Water Resources Control Board***

The State Water Resources Control Board, established by the California Legislature in 1945, is

charged with overseeing water rights and water quality for the state of California.

### ***Composition and Duties***

The Board consists of five members appointed by the governor for four years. Appointments must be approved by the senate. The governor also appoints the Board's chairperson.

Among its many responsibilities, the Board:

- Issues permits for the use of all water except groundwater and riparian water.
- Distributes state and federal loans and grants for constructing sewage facilities.
- Adopts water quality plans, regulations, and policies.
- Sets water quality standards for the Delta.

In implementing its mandate to set Delta water quality standards, the Board issued *Water Right Decision 1485: Sacramento-San Joaquin Delta and Suisun Marsh* in 1978. In that decision, the Board focused on SWP's and CVP's water right permits and operations.

Basically, the Board required the two water projects to maintain water quality in the Delta at levels that would exist if the two projects did not exist. However, after Decision 1485 was adopted, various water users as well as the federal government challenged it in court.

In 1986 Judge John Racanelli, writing for the state court of appeal, cited the *National Audubon Society v. Superior Court of Alpine County* case (public trust doctrine) in ordering the Board to rethink protections for the San Francisco Bay and Delta. In its decision the court broadly interpreted the authority of the Board to establish and enforce water quality objectives that ensure reasonable protection of beneficial uses of Delta water as well as protection for San Francisco Bay.

The court also ordered the Board to consider the effects of all upstream water uses not just those of the two water projects.

To ensure implementation of the court's ruling, the Board, in July 1987, convened the Bay-Delta hearings. Information about those hearings follows.

### ***Bay-Delta Hearings***

The Bay-Delta hearings, an extensive multi-phase process, are designed to result in new water quality and flow objectives for the Bay-Delta estuary. The proceedings are a significant event in recent California water history because the Board's decisions will profoundly affect all water users, including fish and wildlife.

The proceedings were organized into four phases, the evidentiary phase, the water quality phase, the scoping phase, and the water rights phase. Information on those four phases follows.

*Evidentiary Phase.* During the first six months of the hearings, the Board completed the evidentiary phase. The Board received and reviewed more than 40,000 pages of exhibits from more than 600 speakers representing more than 60 separate agencies and groups.

*Water Quality Phase.* In November 1988 the Board began the water quality phase of the proceedings with the release of drafts of two reports, the *Water Quality Control Plan for Salinity* and the *Pollutant Policy Document*. The final pollutant policy document was adopted in June 1990 and is being used as a guide by the two regional water quality control boards overseeing activities in the Delta to update their plans for managing the Delta basin.

In the meantime, however, the November 1988 draft of the water control plan, a significant departure from the existing plan, generated considerable controversy throughout the state.

The Department as well as other agencies expressed concerns with several assumptions about future water demands, alternative supplies, and water project operations that were included in the plan as well as with several factual and legal aspects and policy statements.

Subsequently, at its January 1989 meeting, the Board directed its staff to significantly amend the draft plan and redesign the hearing process.

To address the many technical issues raised by the draft plan, the Board agreed to the proposal to

establish several working groups hosted by various agencies, including the Department of Water Resources; Department of Fish and Game; San Francisco Bay Conservation and Development Commission; Orange County Water District; U.S. Bureau of Reclamation; and the Contra Costa Water District. Eight working groups were organized; and meetings, open to the public, were regularly held.

During 1990 the Board examined three revisions of the plan, which was formally adopted on May 1, 1991.<sup>1</sup> Unlike the November 1988 draft, which included objectives for water quality as well as objectives for flow, the revised water quality plan included only water quality objectives for salinity and temperature. Objectives for flow and other objectives related to water rights will be included in a plan to be adopted after the hearings concerned with scoping and water rights.

*Scoping and Water Rights Phases.* The Board conducted the first scoping phase workshops in March and April 1991 to receive testimony on planning activities, facilities development, negotiated settlements, flow objectives, and legislative action. Additional staff meetings and workshops were scheduled through fall 1991 to develop a range of ten alternative measures for protecting the uses of Bay-Delta waters.

By October 1991 the Board is expected to present a condensed list of alternatives. Afterward, an impact analysis will be performed; and a draft environmental impact report (EIR) will be circulated for review.

Following the release of a draft EIR in summer 1992, the Board is scheduled to begin the water rights phase of the hearings. At that time evidence on the draft environmental impact review document along with information about water rights

issues will be presented to the Board. After those hearings, the Board will adopt a final environmental impact report and formulate and adopt a water right decision to replace Decision 1485.

The Board plans to announce its final decision by the end of 1992. The water quality control plan then will be updated to reflect findings and conclusions presented by the Board at the end of the water rights phase of the hearings.

### *Department of Fish and Game*

In addition to advising the State Water Resources Control Board on all matters affecting fish and wildlife, the Department of Fish and Game manages the state's endangered species act.

The Department's biologists review the status of each listed species at least every five years and recommend steps to be taken to increase its population. A species or subspecies is listed as endangered by vote of the California Fish and Game Commission after petition by citizens or state officials.

Once a species is listed, the Department:

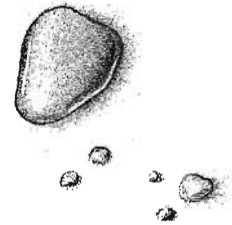
- Monitors its habitat and population trends.
- Recommends to other agencies, including the Department of Water Resources, actions for protecting the species.
- Develops management plans for protected habitats.

The Department also maintains a statewide inventory of California's rare species and natural communities.

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<sup>1</sup>On May 31, 1991, the Golden Gate Audubon Society and others filed suit in Sacramento Superior Court against the Water Resources Control Board, asserting that the Board violated the California Environmental Quality Act (CEQA) and the Porter-Cologne Act by not including flow objectives in their water quality plan.

# 11. Managing Delta Resources



**T**O EFFECTIVELY MANAGE WATER IN THE Sacramento-San Joaquin Delta, the Department of Water Resources has developed three Delta water management programs, the North Delta, South Delta, and West Delta programs (see Figure 16, "Boundaries of North, West, and South Delta water management programs," at the end of this chapter).

In addition, the Department has developed a special flood control program to protect the towns of Walnut Grove and Thornton and the eight islands of the western Delta. The flood control program is also designed to protect the Delta's water quality.

Information on those water management and flood control programs is included in this chapter.

## *North Delta Program*

The objectives of the North Delta Program, which includes the region north of the San Joaquin River from Threemile Slough eastward, are to:

1. Alleviate flooding in the north Delta, including the towns of Thornton and Walnut Grove.
2. Reduce reverse flow in the lower San Joaquin River.
3. Improve water quality.
4. Reduce impacts on fisheries.
5. Improve SWP's flexibility and reliability of its water supply.

The program is also designed to improve navigation and enhance wildlife habitat and recreational opportunities.

## *Environmental Review Documents*

The U.S. Corps of Engineers is the lead federal agency for the North Delta Program according to its regulatory permit authority granted in the Rivers and Harbors Act and Section 404 of the Federal Water Pollution Control Act (Clean Water Act). In March 1989 the Department filed for a permit from the Department of the Army for channel improvements associated with the program; and, as a result, the Corps became formally involved in the planning process.

In May 1989 the Corps distributed a public notice and published a notice of intent in the *Federal Register*, and the Department distributed a notice of preparation. The draft environmental impact report/environmental impact statement (EIR/EIS) was released for public comment in November 1990; the comment period was extended to September 30, 1991. The final EIR/EIS is scheduled for release in June 1993.

## *Review Phases*

As indicated in the environmental documents, the North Delta Program will be implemented in phases. Actions considered for the first phase include:

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PROGRAMS TO  
PROTECT  
THE DELTA'S  
UNIQUE  
RESOURCES.

- Increasing the hydraulic capacity of the Mokelumne River by dredging, improving levees, and creating levee setbacks
- Enlarging the Delta Cross Channel Gate structure
- Testing fish protective measures associated with diversions from the Sacramento River

The Department prefers (1) dredging the South Fork Mokelumne River; (2) enlarging the Delta Cross Channel gate structure; (3) enlarging the main stem and North Fork Mokelumne River channels with a combination of levee setbacks and dredging; and (4) testing fish protective facilities.

The Department's preferences, estimated to cost about \$290 million in 1990, are expected to result in a reduction of the 100-year flood levels in the study area by as much as several feet and:

- Improve water quality.
- Improve SWP's reliability by providing an additional 140,000 acre-feet of water for SWP.
- Reduce the impact of SWP's operations on fisheries.

The environmental analysis and documentation process for the first phase of the program is in progress. Several important issues must be resolved to complete that process, though, including negotiating measures to protect fisheries and wildlife, delineating additional wetlands and analyzing impacts, and developing a dredged materials management program.

After completion of the first phase, the project will be monitored to determine its effectiveness. If, through monitoring, the Department learns that additional work is needed, the feasibility of implementing additional phases will be evaluated.

Alternatives for other phases include installing partial tide gate structures in the Sacramento River, Steamboat Slough, and Threemile Slough and improving the efficiency of transferring water through the Delta by creating a new channel to connect the Sacramento River near Hood or Isleton.

After the environmental documentation has been completed, the Department will apply for permits

and begin final design of the project. First-phase construction would take at least two years; the project would be operational in about July 1997.

## *South Delta Program*

The South Delta Program is designed to resolve local problems with water levels and quality; provide means to increase diversions for winter banking and storage south of the Delta; and improve conditions in the Delta for fisheries.

### *Proposals*

The environmental review process, currently in progress, includes proposals by the Department and the U.S. Bureau of Reclamation (USBR) for:

- Constructing up to four barrier facilities in south Delta channels to improve local water levels, circulation, and water quality
- Enlarging a portion of Middle River to improve conveyance and circulation
- Enlarging Clifton Court Forebay from 2,180 surface acres to about 5,000 acres with new intakes at Old River and Middle River
- Obtaining a permit from the U.S. Corps of Engineers to increase diversion capability, thereby allowing Harvey O. Banks Delta Pumping Plant to pump at 10,300 cfs for winter banking

The proposal preferred by the Department, enlarging Clifton Court Forebay, was chosen because it provides the Department with (1) the operational flexibility necessary to reduce fish losses, including young striped bass; (2) capacity to bank water south of the Delta in the winter; and (3) improved reliability of the water supply. In addition, the alternative allows the Department to meet the obligations of an agreement with the South Delta Water Agency. Also, improved flow patterns will help salmon and steelhead trout migrations in the San Joaquin River, and conditions for local agricultural diversions will be improved.

Wildlife habitat losses due to the enlargement of Clifton Court Forebay will be mitigated by adopting a wildlife management plan on Sherman Island or Twitchell Island and other locations as appropriate. Also, the Department and USBR have signed a framework agreement with the Department of Fish and Game to define the area of negotiations.

A negative declaration for the proposed land purchases was published in April 1990. The draft EIR/EIS for the program was released in July 1990.

Two public hearings to obtain input into the environmental review process were held on September 19, 1990, in Sacramento, and September 20, 1990, in Tracy, California.

### *Review Period*

The review period for comments on the draft EIR/EIS was extended to September 30, 1991, to provide for concurrent review of the South Delta Program with the draft environmental documents on the North Delta and Los Banos Grandes programs, which were released in late 1990.

The extension also resulted in additional opportunities for public participation and input into the review process. The Department received comments from 15 public agencies and 60 private parties. The final EIR/EIS is scheduled to be released in fall 1992.

After the final EIR/EIS has been distributed and the notice of determination is signed and filed, state and federal regulatory agencies may then complete final actions on permits required to construct and operate the proposed facilities.

### *West Delta Program*

The four significant issues being considered in the West Delta Program concern flood control, water quality, reliability of the water supply, and protection of wildlife.

The program includes the following eight objectives:

1. Enhancing SWP's reliability
2. Identifying potential wildlife habitat mitigation projects
3. Improving flood control
4. Increasing recreational opportunities
5. Meeting the water supply and water quality needs of the western Delta
6. Minimizing subsidence and oxidation of peat soils
7. Protecting highways and utilities
8. Providing habitat for waterfowl and wildlife

### *Investigations*

As part of the program, the Department of Water Resources and the Department of Fish and Game have been investigating water management needs in the western portion of the Delta.

That investigation, focused on Twitchell Island and Sherman Island, was initiated in 1981 through a contract between the North Delta Water Agency and the Department.

The contract called for protecting the water supply of or constructing an overland water supply facility for Sherman Island, which is located at the confluence of the Sacramento River on the north and the San Joaquin River on the south. Sherman Island, also bordered by Threemile Slough on the east and by Sherman Lake and the Lower Sherman Island Wildlife Area on the west, is home to about 200 people.

The island is crossed by Highway 160, a major artery connecting Sacramento and the Antioch-Pittsburg areas. Several electrical transmission lines cross the island, and several underground gas fields are located there.

Twitchell Island is an agriculturally based island located northwest of Sherman Island. The island is bordered on the north by Sevenmile Slough, on the west by Threemile Slough, and to the south and east by the San Joaquin River. The island, home to about 20 people, is accessible by country roads and

contains some gas fields. One recreational area, Owl Marina, exists on the island.

Western Delta islands are important for protecting the Delta's water quality and the reliability of SWP's water supply. In addition, because these islands are situated where fresh river water and salty bay water meet and mix, the islands' levees are important for preventing permanent flooding, which would result in increased saline and chloride levels in water flowing around the Delta's west end to Harvey O. Banks Delta Pumping Plant.

### *Alternatives*

Through preliminary investigations of Twitchell Island and Sherman Island, several concerns have been identified, including changes in the agricultural economy, increased maintenance costs for levees, and continued changes in land subsidence. Because of those concerns as well as a growing recognition of environmental needs, planners have considered alternatives to (1) constructing an overland water supply facility on Sherman Island; and (2) meeting other West Delta Program objectives on adjacent West Delta islands.

One alternative is to change land-use practices on the islands by implementing wildlife management plans. As a result of those plans, designed to be implemented in conjunction with other Delta management plans, several thousand acres of habitat for wildlife and waterfowl as well as for recreational areas could be provided and subsidence could be reduced. If Sherman Island is developed, the need for an overland facility would be eliminated.

In addition, rehabilitating the levees would help to reduce floods and increase the reliability of SWP's water supply. (Specific information about the plan is included in a feasibility report prepared by the Department of Fish and Game and released in October 1988.)

At this time, more than 51 percent of the land on Twitchell Island has been purchased; and the Department is negotiating to purchase an additional 30 percent. The land will be used to develop

recreational areas and a habitat for wildlife, thereby increasing reliability of SWP's water supply; reducing subsidence through changes in land use practices; and reducing floods through levee rehabilitation.

An interim management plan for the island will be completed by January 1992, and the final wildlife management plan, within the next two years.

The Department of Water Resources and the Department of Fish and Game contacted landowners on Sherman Island to investigate their willingness to sell their land or allow an environmental easement. Landowners indicated a willingness to sell but were not satisfied with the terms and appraised values determined by the Department of Water Resources.

The Department is working with the North Delta Water Agency and landowners on Sherman Island to identify terms acceptable to landowners. In the meantime, as an alternative, the Department is continuing with plans for Twitchell Island along with other West Delta islands.

### *Special Flood Control Program*

As a result of the Delta Flood Protection Act passed by the California Legislature in March 1988, \$12 million is to be appropriated each year until January 1, 1999, for the development of two programs designed to prevent flooding in the Delta: the Delta Levee Maintenance Subventions Program and the Special Flood Control Program.

The following section includes information about the Department's participation in the Special Flood Control Program.

### *Protection of Towns*

The Special Flood Control Program includes a mandate for protecting the towns of Walnut Grove and Thornton and the eight islands of the western



Delta—Bethel, Bradford, Holland, Hotchkiss, Jersey, Sherman, Twitchell, and Webb.

Those islands require protection because of their urban areas and public facilities and because they are critical to the protection of the Delta's water quality. Because fresh and salt waters mix nearby, flooding any of those islands would allow saline water to intrude further into the Delta.

In July 1989, the legislature approved the flood control plan for Thornton and Walnut Grove. In the plan some immediate levee improvements were recommended as well as several long-term improvements to levees, channels, and facilities. Implementation of the plan began in 1990.

Since 1990, a financial study of local cost-sharing possibilities has been completed and a cost-sharing agreement has been signed between the Department and Reclamation District 348. The final design will be completed in September 1991; and construction is expected to begin in spring 1992.

### ***Implementation***

A long-term plan, *Actions and Priorities, Delta Flood Protection Act, Eight Western Delta Islands*, was approved in May 1990 by the California Water Commission as the second step in implementing the flood control program.

That long-term plan will be used by the Department to determine how to best use appropriations to protect the eight western Delta islands. Those protections include:

1. Rehabilitating threatened levees
2. Documenting levee encroachments on Bethel Island and Hotchkiss Tract
3. Investigating subsidence
4. Coordinating efforts to use imported dredged material for rehabilitating levees
5. Verifying elevations in the Delta using a Global Positioning System Survey
6. Upgrading levees to the standards included in Bulletin 192-82, *Delta Levees Investigation*, published by the Department in December 1982

Information about each improvement follows.

### ***Levee Rehabilitation***

Rehabilitating the threatened levee sites is important because it provides time to perform long-term improvements to the levees.

To date, over \$3 million has been spent at locations on Webb Tract and Sherman, Twitchell, and Bethel islands. The costs of rehabilitation are divided between the state and the local agencies, which may pay up to 25 percent of the costs. The actual amounts to be paid depend on the results of an ability-to-pay study to be completed for each island by December 1991.

### ***Encroachment Documentation***

Structures encroaching on the levees conceal seepage, boils, rodents' burrows, cracks, and other causes of levee failures. In addition, those structures restrict access to sections of the levees needing improvements or repairs. In August 1989 the Department documented 130 encroachments on Bethel Island and Hotchkiss Tract.

The first phase of an encroachment study report was completed in March 1990. The second phase, in which waterside structures, bulkheads, and retaining walls will be identified, should be completed by March 1992.

### ***Subsidence Investigations***

Subsidence of peat soils is an important concern throughout the Delta. As the ground surface on an island subsides, the geometry of the levee changes; and the levee is less likely to withstand the pressure of the water. That water pressure results in an increased probability of flooding if the levees are not widened to resist it.

The legislature recognized that problem and in the Delta Flood Protection Act, requested the Department to monitor subsidence and study its causes. Accordingly, the Department has contributed \$130,000 to the U.S. Geological Survey to help fund an investigation of subsidence in the Delta.

After reviewing preliminary data, the Department has concluded that:

- Land management practices substantially influence subsidence rates.
- Cultivation practices, which raise soil temperature and lower the water table, dramatically increase oxidation of the peat soils.
- Conversion of highly organic peat soils to a carbon dioxide gas and the subsequent discharge from the peat appears to be the primary cause of subsidence.

Studies designed to quantify subsidence rates, with a focus on the underlying physical and chemical processes that lead to surface subsidence, are continuing, along with identification of land management practices to help minimize subsidence.

### ***Upland Relocation***

As local sources of fill material are depleted, new economical sources must be located. The Department, in coordination with the U.S. Corps of Engineers, Reclamation District 341, and the Central Valley Regional Water Quality Control Board, has implemented a pilot project to determine the viability of relocating material from the San Francisco Bay.

The program is based on the idea that through upland relocation, dredged material can be used as a resource to create new wetlands, strengthen levees, and protect existing habitat.

Currently, approximately 2,000 cubic yards of material dredged from Suisun Slough has been placed on Sherman Island to stabilize the levees.

The Department realizes that dredged material can be used only if it does not degrade Delta water quality. A monitoring and reporting program developed by the Regional Water Quality Control

Board has been implemented, and results indicate no unusually high concentrations of metal or minerals and no biotoxicity effects.

### ***Elevation Verification***

In 1989 surveys of the Delta were taken by satellite using the Global Positioning System. The data obtained are being used to verify elevations in the Delta and to ensure that improved levees will be high enough so overtopping will not occur during high-water conditions.

The National Geodetic Survey will eventually publish data acquired from those field surveys. In the meantime, the Department is producing an interim report on the surveys and the verified Delta elevations. The report should be completed by August 1991.

### ***Levee Upgrades***

The Department also is upgrading the levees according to standards contained in Bulletin 192-82, *Delta Levees Investigation*. According to those standards, the agricultural levees must be raised to provide 1.5 feet of freeboard for a 300-year flood and widened to increase both land and waterside stability.

To encourage upgrading of levees to the standards contained in Bulletin 192-82, the Department is using available special project funds when subvention program funds are not available.

To augment its flood control actions, the Department is developing long-term plans to provide higher levels of protection for all eight islands. The preparation of those plans was approved by the California Water Commission in May 1990. The programs resulting from those plans will be funded by the yearly appropriations as provided for in the Delta Flood Protection Act.

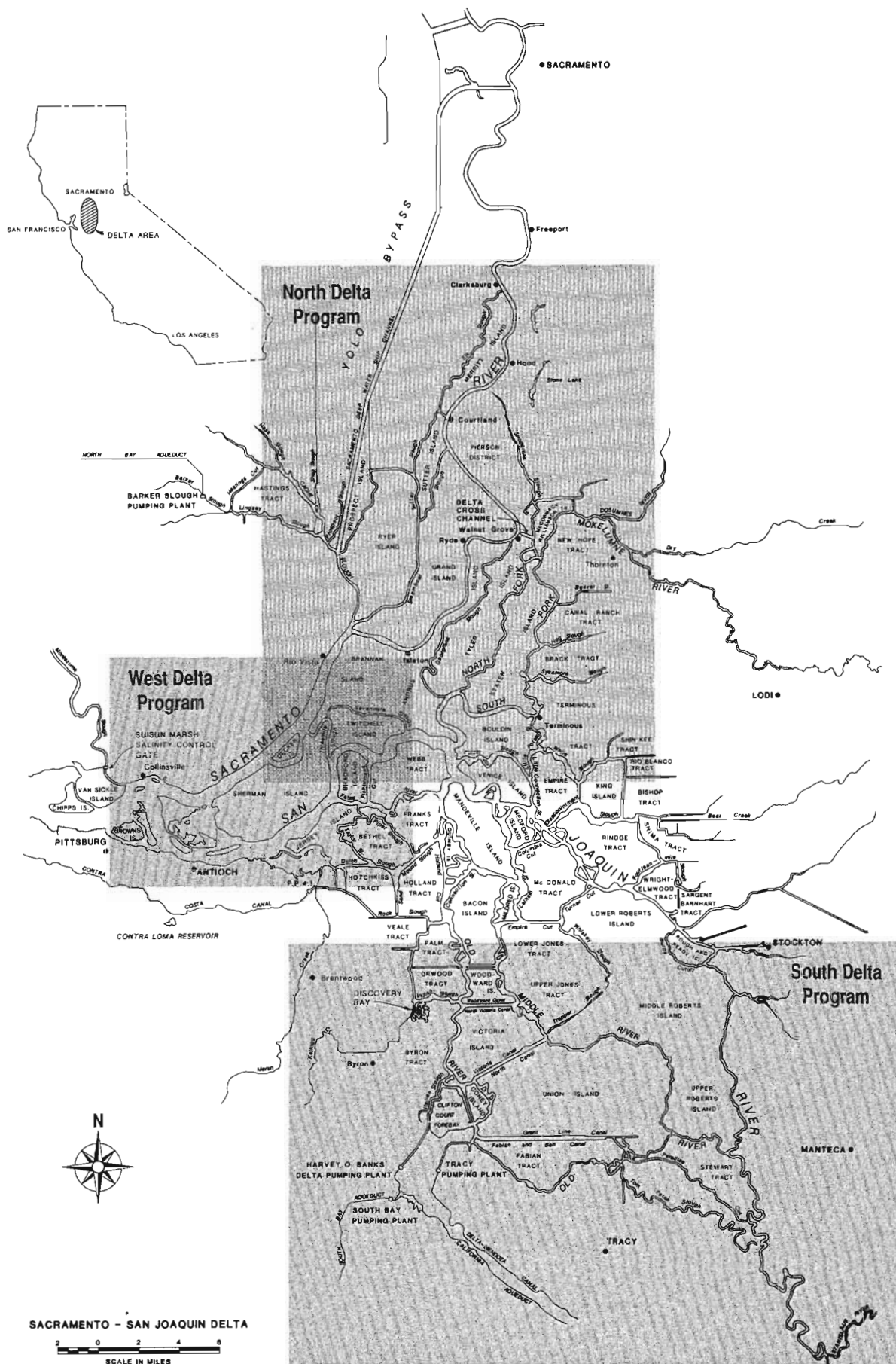
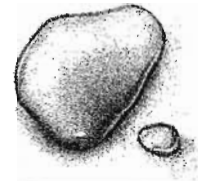


Fig. 16. Boundaries of North, West, and South Delta water management programs



# 12. Monitoring Water Quality



**T**HE STATE WATER PROJECT (SWP) supplies all or part of the water for approximately 20 million Californians as well as water for agriculture, industry, power generation, recreation, and fish and wildlife. The quality of water supplied for those beneficial uses is safeguarded through an extensive water quality monitoring program.

Water quality objectives are set for existing or potential sources of drinking water by the State Water Resources Control Board (SWRCB) and Department of Health Services (DHS). Additional contractual water quality objectives at points of delivery are set by SWP's contractors. Water quality in the Delta and Suisun Marsh is protected under SWRCB's Water Right Decision 1485 (1978).

The Department of Water Resources monitors water quality through an automated network of continually operating recorders and laboratory analyses of field samples collected at weekly, quarterly, monthly, or annual intervals. Special studies are conducted to investigate water quality at potential problem sites or as a result of unique events.

Information about the Department's monitoring activities, arranged according to "Delta Activities" and "Activities Outside the Delta," follows.

## *Delta Activities*

Monitoring activities in the Delta are conducted according to SWRCB's Decision 1485, which was

designed to protect beneficial uses of water in the Sacramento-San Joaquin Delta and Suisun Marsh. As written by SWRCB, the decision, which also applies to the U.S. Bureau of Reclamation (USBR), includes standards and operational constraints concerning water flow volumes, salinity levels, and export quantities. Locations of monitoring sites may be found in Figure 17, "Water quality monitoring sites in Sacramento-San Joaquin Delta," at the end of this chapter.

Constraints placed on SWP's operations in the Delta are determined according to water year classifications included in Decision 1485. Water year classifications are based on the Department's May 1 forecast of unimpaired runoff to the Sacramento River. Values set for Decision 1485 standards differ for each type of water year classification.

The Department's May 1, 1990, forecast resulted in a water year classification of *critical* for fish and wildlife and for municipal and industrial uses. The Department attempted to meet standards applicable to the *critical* classification through operational decisions for releases from reservoirs, Delta cross-channel gate operations, and Delta exports. Those decisions are based on real-time monitoring data and long-range modeling efforts.

Information about specific monitoring activities conducted in the Delta follows, organized according to "Decision 1485 Standards," "Special Delta Surveys," and "Fish and Agricultural Protections."

THE QUALITY OF WATER SUPPLIED BY THE STATE WATER PROJECT IS SAFEGUARDED THROUGH AN EXTENSIVE MONITORING PROGRAM.

## ***Decision 1485 Standards***

Standards for outflow, exports, and water quality and for monitoring phytoplankton distribution and quantity are included in Decision 1485. Information about activities related to those standards follows.

### ***Outflow and Export Standards***

Water quality in the Delta is greatly influenced by the volume of freshwater flow from the Sacramento and San Joaquin rivers, modified by water exports and consumptive uses in the Delta. The Delta Outflow Index (DOI) is a calculated approximation of this seaward freshwater outflow as it passes Chipps Island near Pittsburg, beyond the confluence of the Sacramento and San Joaquin River.

The Delta outflow and export standards are important because they help to ensure:

1. Water quality in the Delta
2. Preservation of Suisun Marsh
3. Survival of striped bass, salmon, and other important estuarine species

Delta water withdrawals through Harvey O. Banks Delta Pumping Plant during May, June, and July are limited according to Delta export standards.

All Decision 1485 export and Delta outflow standards were met during 1990 in spite of severe drought conditions resulting in only 25 days of Delta outflow over 10,000 cfs (cubic feet per second) during the entire year. The daily outflow averaged only 5,310 cfs.

A mean monthly DOI over 5,000 cfs occurred only six times in 1990. By contrast, in *critical* and *dry* years 1988 and 1989, daily outflow averaged 8,621 cfs and 11,507 cfs. *Wet* years such as 1984 and 1986 averaged over 20,000 cfs daily.

The highest mean monthly Delta outflow occurred during January, 1990 (10,728 cfs). During January four days with outflows over 20,000 cfs and 12 days with outflows over 10,000 cfs were recorded. The highest daily outflow of the year

occurred within this high-flow period on January 17 (29,535 cfs). Significant end-of-May storms produced another period of high outflow with northern Sierra Nevada precipitation four times the seasonal average.

The lowest monthly mean DOI and the lowest daily DOI occurred within a five-day period in September. The five-day average was 565 cfs; the lowest monthly mean was 2,401 cfs; and the lowest daily DOI value, 486 cfs.

### ***Water Quality Standards***

Water quality in the Delta depends primarily on a balance between freshwater downstream flows and saltwater tidal incursions. During periods of lower-than-normal river flow, water is released from SWP's and the Central Valley Project's (CVP) reservoirs (Shasta, Oroville, and Folsom) to meet all Delta standards by balancing Delta outflow and pumping needs. The dual operational objectives of both the SWP and CVP systems are to:

1. Fully comply with all Delta standards and agreements.
2. Conserve surplus water beyond that needed for complying with standards for other uses.

The releases from SWP and CVP reservoirs are coordinated to accomplish both of those objectives.

Hourly Delta water quality readings and tidal and weather conditions are among data evaluated in the daily scheduling of SWP operations. Occasionally, because of unexpected and sudden changes in local climatological conditions, Delta tides may be larger than those forecasted; and Delta water quality conditions may rapidly deteriorate due to the large tidal influxes.

Under those circumstances, SWP and CVP may increase releases from reservoirs or reduce Delta exports or both to improve Delta water quality. Releases from reservoirs require a carriage time of between one to four days to reach the Delta.

Sixteen water quality standards were met during 1990, and the following three were exceeded for

three short periods: (1) the agricultural standard at Emmaton; (2) the Suisun Marsh monthly mean high-tide standard for Beldon's Landing; and (3) the mean daily chloride standard at the Contra Costa Canal Intake. Specific information about each incident follows.

*Agricultural Standard at Emmaton.* The agricultural standard at Emmaton (14-day mean electrical conductivity of not more than 2.78 mS/cm [milli-Siemens/centimeter]) was exceeded for seven days from May 14 through 20. As a remedy, upstream reservoir releases were increased by 1,300 cfs to 3,500 cfs and the Delta Cross Channel was closed.

*Suisun Marsh Monthly Mean High-Tide Standard.* The Suisun Marsh monthly mean high-tide standard for November at Beldon's Landing on Montezuma Slough (15.5 mS/cm) was exceeded by 0.1 mS/cm due to a failure of a gate cable at the Suisun Marsh salinity control gates on October 30 and closure of the gate for repair for two and one-half weeks. Following repairs, gate operations expanded from daylight hours only to continuous operations to bring salinity levels back to compliance levels.

*Mean Daily Chloride Standard.* The mean daily chloride standard (maximum of 250 µg/l [micrograms per liter]) at the Contra Costa Canal Intake was exceeded for 11 days from December 18 through 29 because of rising tides and strong westerly winds earlier in the month. Upstream reservoir releases were increased, the Montezuma Slough Salinity Control Structure gates were operated fully opened, and export pumping was curtailed to counter high salinity levels.

### ***Phytoplankton Distribution***

Phytoplankton are the base of the food chain for much of the Delta's fish and wildlife. Therefore, distribution and quantity of phytoplankton, measured by chlorophyll *a* concentration and microscopic analysis, is a measure of the Delta's primary productivity.

Phytoplankton communities are studied as biological indicators of possible impacts to the Delta

from SWP and CVP water operations. Data on phytoplankton are also used to track long-term changes in biological communities. Also, phytoplankton blooms may be associated with taste and odor problems in drinking water.

Continuous, high phytoplankton concentrations, dominated by *Cyclotella* spp., *Thalassiosira* spp., and *Skeletonema potamos*, were found in the south Delta from April through September.

In April and May, the central Delta had two moderately large phytoplankton peaks composed primarily of *Skeletonema potamos* and *Melosira granulata*. Low phytoplankton concentrations were measured in all other Delta areas.

### ***Special Delta Surveys***

Special surveys of aquatic plant communities and the Asiatic clam were conducted in the Delta during 1990. Information about the surveys is contained in the following paragraphs.

#### ***Aquatic Plant Communities***

Vegetation surveys are used to document long-term and seasonal changes in Delta aquatic vegetation. Yearly survey results have consistently indicated a seasonally stable littoral zone plant assemblage composed of submersed aquatic species. Much biomass, however, is contributed by emergent species, primarily the common tule (*Scirpus acutus*) and occasionally the water hyacinth (*Eichhornia crassipes*).

Vegetation surveys were conducted in the central and south Delta during May and November to augment the Department of Food and Agriculture's (DFA) annual search for the aquatic weed hydrilla (*Hydrilla verticillata*), a rapidly spreading water weed that reduces flow capacity in canal systems and clogs municipal water works. No hydrilla was detected in the Delta.

#### ***Asiatic Clam Survey***

The Department is required by SWRCB's Decision 1485 to assess potential impacts of SWP operations on biological communities living in the



Delta. The Department participates in an inter-agency effort to gather biological and hydrological information to document Delta conditions. That information is used by the Department to help distinguish among many factors that influence community dynamics.

Through gathering information, a change in the Delta bottom dwelling benthic community was noted—the appearance of the Asiatic clam (*Potamocorbula amurensis*), a recent accidental introduction to the Delta, possibly from ships' ballasts.

The Department conducted an intensive follow-up survey of the benthic community to determine the distribution and substrate preference of the clam. More than 200 sites in San Pablo Bay, Suisun Bay, Suisun Marsh, and the west-central Delta were sampled during August and September 1990.

*Potamocorbula amurensis* was found in highest numbers in San Pablo Bay, Suisun Bay, and Suisun Marsh. Silt and clay compose the most frequently associated benthic substrate.

The clam is an extremely efficient filter feeder and is thought to contribute to the decreasing numbers of striped bass by eliminating the zooplankton (*Eurytemora affinis*), an important food for the juvenile bass.

### ***Fish and Agricultural Protections***

Rock barriers were installed on Old River to aid the survival of migrating salmon and on Middle River during the agricultural irrigation season. Information about the installations follows.

#### ***Old River Barrier***

A February 1969 joint agreement between the Department, the U.S. Fish and Wildlife Service, and the Department of Fish and Game (DFG) requires the Department to install a temporary rock barrier on Old River during years when fall flows are forecast to be low.

The barrier helps migrating salmon and steelhead trout survive by increasing fall flows in the lower San Joaquin River and alleviating the dissolved oxygen (DO) depression (DO less than

5 mg/l [milligrams per liter]) that can occur in the Stockton Ship Channel when flows are low and water temperatures are high.

Prior to the installation of the Old River barrier on September 11, dissolved oxygen levels within the Stockton Ship Channel measured below the 5 mg/l standard. By October 17, 1990, both top and bottom dissolved oxygen concentrations had increased substantially to levels consistently above 6.5 mg/l. The barrier was removed on November 27.

#### ***Middle River Barrier***

A rock barrier was placed in Middle River on April 6 for the agricultural irrigation season and removed on September 29, as specified in an October 1986 agreement with the South Delta Water Agency and the U.S. Bureau of Reclamation. The barrier helped to:

- Increase and stabilize water levels for more consistent agricultural water diversions.
- Improve circulation and flush the shallower sloughs and river reaches in the South Delta.

### ***Activities Outside the Delta***

Activities conducted outside the Delta include monitoring water quality standards; conducting temperature studies at Oroville Reservoir; protecting water quality in the Suisun Marsh; and developing and implementing a program for improving drainage in the San Joaquin Valley. Information on those activities follows.

#### ***Water Quality Standards***

The Department monitors water quality at approximately 30 stations located outside the Delta. Approximately 20 stations are located south of the Delta at reservoirs, power plants, and at branches and the main canal of the California Aqueduct. Other monitoring activities are conducted at state reservoirs north of the Delta, Lake Oroville, Antelope Lake, and Frenchman Lake.

Except for infrequent local storm inflow, Delta exports are the sole source of water for SWP facilities and reservoirs south of the Delta. Most Delta water is exported south during the winter months when the greatest freshwater outflow occurs; San Luis Reservoir, the only SWP conservation storage facility between the Delta and southern California, is usually filled by May 1. Thus, reservoirs south of the Delta are usually supplied with the highest quality water.

Water samples are analyzed to determine total levels of dissolved solids and concentrations of chlorides, sulfates, sodium, and boron, among others. Those levels are compared with monthly average water quality objectives included in Article 19, "Water Quality," of the water supply contracts, which were originally established based on the expected construction of an efficient cross-Delta water transfer system.

The Article 19 objectives for average monthly totals of dissolved solids, hardness, sulfates, and boron were all met; the measured quality was well below objective limits. However, the objective for the percentage of sodium-to-salt content included in Article 19 was exceeded at all points south of the Delta. The chloride objective was exceeded on several occasions in nearly all waters between the Delta and Pearblossom Pumping Plant, reflecting generally lower Delta freshwater outflow during drought conditions of 1990.

The Department also monitors water south of the Delta for levels of asbestos originating in natural geological formations adjacent to the aqueduct. No asbestos beyond background levels was detected in 1990.<sup>1</sup>

### *Temperature Studies*

During summer 1990, Lake Oroville storage fell to the lowest level since the 1977 drought. Because

of the drop in storage, the cold bottom water was below the intake structure. Consequently, water released from the warmer, accessible lake surface in August reached the downstream Feather River Fish Hatchery at violation-level temperatures. (Violation levels are included in guidelines used by the Department to regulate water temperature at the hatchery. Those guidelines are part of a 1983 agreement between the Department of Water Resources and DFG.)

In response, the Department modified the movable control shutters of the intake structures to reach cooler reservoir water levels and cut back the rate of generation at the Hyatt Powerplant.

In addition, special studies of lake temperature profiles, power generation relative to river water temperature, and intake structure shutter configurations were done; and the Department investigated opening the river release valve beneath the dam for access to cooler water levels. It was determined that measures to reduce temperatures were limited to shutter and power manipulations.

In spite of operational changes made to lower water temperatures, the temperature in the fish hatchery exceeded the maximum specified in the agreement with DFG by one degree for seven days in September, one to two degrees for most of October and half of November, and three degrees for three days in November. Temperatures returned to acceptable limits on November 20.

### *Suisun Marsh Protection Plan*

Suisun Marsh, consisting of approximately 55,000 acres of tidal and managed brackish water wetlands and 29,000 acres of bays and sloughs, is one of the largest contiguous brackish water tidal marshes in the United States. Situated in southern Solano County, west of the Sacramento-San Joaquin Delta and north of Suisun Bay, the marsh encompasses more than 10 percent of California's remaining natural wetlands.

This section includes information, arranged chronologically, about activities designed to protect the integrity of Suisun Marsh as conducted by the

<sup>1</sup>For additional information about water quality, see Bulletin 132, Appendix E, *Water Operations in the Sacramento-San Joaquin Delta*; the monthly publication, *State Water Project Operations Data*; and a summary of the Department's monitoring program to be available in 1992. Contact Publications Sales, Department of Water Resources, P. O. Box 942836, Sacramento, CA 94236-0001, for copies of the publications.

Department, U.S. Bureau of Reclamation, and other agencies.

### ***Preservation Act***

Since 1974 the legislature and SWRCB have acted to preserve Suisun Marsh as a unique environmental resource. In 1974 the legislature enacted the Suisun Marsh Preservation Act (SB 1981), which required the development of a protection plan for the marsh.

According to the act, the San Francisco Bay Conservation and Development Commission and DFG must prepare the Suisun Marsh Protection Plan to:

- Preserve the integrity of Suisun Marsh.
- Ensure wildlife's continued use of the Suisun Marsh.

### ***Decision 1485 Standards***

In 1978, SWRCB established channel water salinity standards for the Suisun Marsh when it issued Decision 1485. Those standards were designed to provide optimum habitat for waterfowl food plant production and to preserve the Suisun Marsh as a brackish water tidal marsh.

By issuing Decision 1485, SWRCB also established conditions for the water rights permits for SWP and CVP. Order number seven of Decision 1485 required both projects to develop and fully implement a plan, in cooperation with other agencies, to ensure that SWRCB channel salinity standards were met.

In 1984 the Department published *Plan of Protection for the Suisun Marsh*, which included the environmental impact report (EIR) prepared in cooperation with DFG, Suisun Resource Conservation District, and USBR. The U.S. Fish and Wildlife Service also provided input. The plan contained a proposal for implementing methods to:

- Monitor water quality.
- Manage wetlands.
- Install, in phases, facilities to improve the water quality of the inner marsh.

The EIR included information about actions identified in the plan as well as information about impacts of each action.

According to the plan, the lead agencies, the Department, and USBR, while planning subsequent actions, would prepare supplemental environmental documentation if new significant impacts were identified.

Phase one and phase two components have been completed and include Morrow Island distribution system, Roaring River distribution system, and Goodyear Slough outfall (phase one); and Suisun Marsh salinity control gates, also known as the Montezuma Slough control structure (phase two).

Components of the original plan remaining to be completed include construction of the Boynton-Cordelia ditch (phase three); the Cordelia-Goodyear ditch (phase four); the Goodyear Slough culverts (phase four); the Grizzly Island distribution system (phase five); and the Potrero Mills ditch (phase six).

Alternatives to the components previously listed may be identified as new information becomes available during the environmental review process.

### ***Preservation Agreement***

In 1986 federal legislation (Public Law 99-546) authorized funds to USBR for protecting Suisun Marsh. In 1987, USBR, the Department, DFG, and the Suisun Resource Conservation District signed the Suisun Marsh Preservation Agreement.

An important feature of the agreement is the Suisun Marsh salinity control gates facility, which the Department and USBR began testing in 1978. The results of the tests indicated that additional control measures were needed to meet the western Suisun Marsh channel water salinity standards. Consequently, the Department and USBR proposed for implementation the Western Suisun Marsh Salinity Control Project.

## ***Salinity Control Project***

In June 1990 the Department and USBR began environmental review activities for the proposed Western Suisun Marsh Salinity Control Project. In November 1990 the notice of intent for the project was published in the *Federal Register* and a notice of preparation was distributed to responsible and cooperating agencies and the state clearinghouse.

A public scoping session was held in Fairfield on December 13, 1990, to receive public input on the scope and issues included in the environmental impact statement (EIS) and environmental impact report (EIR). The draft EIS/EIR is scheduled to be completed and available for review by September 1992.

Various environmental impacts will be considered when preparing the EIS/EIR. Both positive and adverse impacts will be determined, and mitigation measures will be proposed for adverse impacts. Cumulative impacts on the Marsh and Suisun Bay area will be assessed with respect to existing Marsh facilities and future facilities proposed in a plan to protect resources.

At this point, the Department and USBR have determined that the Marsh and Suisun Bay includes threatened and endangered plants and wildlife as well as archaeological sites. Surveys will be conducted to identify them.

Also, the habitat of Marsh flora along proposed ditch alignments, ponds, and culverts would be disturbed. According to the 1987 Suisun Marsh Mitigation Agreement signed by USBR, the Department, and DFG, converted wetland habitat would be reestablished elsewhere in the Suisun Marsh.

For the Boynton-Cordelia Ditch, approximately 50 acres of wetland habitat and 100 acres of upland habitat would be converted to aquatic habitat, levees, and access areas. For the Cordelia-Goodyear Ditch, approximately 45 acres of seasonal wetland habitat and 45 acres of upland habitat would be converted to aquatic habitat, levees, and access areas. The Goodyear Slough culverts would not require a significant amount of land.

Wildlife habitat and wildlife movement corridors could be impacted by the enlargement of natural channels; the constructed ditches, ponds, and culverts; and dredge spoils. Fish, both resident and migratory, could be affected by the movement of water from Boynton Slough to Cordelia Slough, and from Cordelia Slough to Goodyear Slough, as well as water transport through ponds, culverts, and siphons.

The natural channels in the vicinity of the proposed ditches and culverts will be checked for scour or siltation or both as a result of altered water velocities. Other environmental concerns will be considered as they are identified.

Because portions of the proposed sites for the Western Suisun Marsh Salinity Control Project are within wetland areas, the objectives and requirements of Presidential Order 11988 and Presidential Order 11990 will be considered throughout the planning and preparation of the EIS/EIR.

Prior to construction and operation of the Boynton-Cordelia ditch, the Cordelia-Goodyear ditch, the Goodyear Slough culverts, or alternative actions, USBR and the Department must receive permits from federal and state agencies, including the U.S. Army Corps of Engineers, DFG, San Francisco Bay Conservation and Development Commission, San Francisco Regional Water Quality Control Board, and California State Lands Commission.

Those agencies as well as approximately 18 others, including various public agencies in Solano County, will help to evaluate the EIS/EIR for the Western Suisun Marsh Salinity Control Project to ensure that it complies with the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

## ***San Joaquin Valley Drainage Program***

Agricultural drainage, especially drainage on the west side of the San Joaquin Valley, presents two basic problems for farmland irrigated with water supplied by CVP and SWP. Those problems involve:

1. Salt buildup and water logging of irrigated lands due to a high groundwater table—conditions that adversely affect crops and productivity
2. Toxic or potentially toxic trace elements in the shallow groundwater, which when drained and discharged to streams, ponds, or wetlands, can adversely affect fish and wildlife

To solve or mitigate the effects of those problems, the Department continues to work with federal and local agencies as well as environmental groups and private irrigators. For example, the Department has actively participated as a member of the State-Federal San Joaquin Valley Drainage Program and works with the representatives from state, federal, and local agencies interested in finding solutions to drainage and drainage-related problems.

In September 1990 the San Joaquin Valley Drainage Program published *A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley*. The Department focused its activities on studying and implementing the recommendations included in the report, particularly those pertaining to state irrigation service areas in the western San Joaquin Valley.

Currently, in addition to implementation and coordination, the Department is involved in:

1. Collecting and evaluating data on drainage water
2. Demonstrating drainage reduction techniques
3. Researching and demonstrating drainage treatment methods
4. Investigating evaporation ponds

The Department also provides information and technical assistance for managing agricultural drainage water to local agencies throughout the western San Joaquin Valley. Information about specific activities conducted by the Department follows.

### ***Data Collection***

The Department has collected and evaluated data on drainage water since the mid-1960s. In collecting and evaluating data, the Department has focused its attention on the occurrence, movement, and fate of selenium in areas where drainage problems exist.

Since mid-1988, the Department has concentrated its efforts in the Tulare Lake Basin, where a network of shallow, 20-foot-deep wells was installed to allow the Department to study the horizontal movement of selenium and determine locations for studying the vertical movement.

Currently, 16 well clusters (wells 20, 50, 100, and 200 feet deep) are being installed in selected locations to investigate the vertical movement of selenium. The installation began in summer 1990. Four clusters were installed, and the Department plans to install four additional clusters each year until 1994.

### ***Drainage Reduction***

The Department has developed demonstration projects to increase irrigation efficiency, reduce deep percolation, and reuse drainage water on progressively more salt-tolerant crops, trees, and bushes.

Currently, demonstration projects are located in the northern San Joaquin Valley; but as those projects are completed, the Department will shift its emphasis to the southern part of the valley.

A significant reuse demonstration project to irrigate salt-tolerant trees and bushes with drainage water was begun in the Tulare Lake Drainage District in 1990. The project, operated and cooperatively funded by the Tulare Lake Drainage District, will eventually involve all Department drainage program activities.

### ***Drainage Treatment***

In cooperation with other agencies, the Department is working to establish a multiagency drain-

age treatment research and demonstration facility near Tranquillity to investigate methods to remove selenium. The Department will participate in various activities at that site, including a demonstration of using bacteria to remove selenium from drainage water, a project cooperatively funded by USBR.

The Department's drainage treatment activity at the Los Banos Demonstration Desalting Facility has ended. Equipment and facilities are being removed, including one desalting unit that has been loaned to the Department of Parks and Recreation to produce an emergency water supply during the current drought.

### ***Evaporation Ponds***

The Department's evaporation pond investigation program, initiated in 1986, has been coordinated with local, federal, and other state agencies to develop acceptable criteria for designing, constructing, operating, and managing the ponds to minimize impacts on groundwater and wildlife.

The Department organized and a staff member serves as chairperson of an Evaporation Pond Coordinating Committee, consisting of pond operators, staff members from regulatory and water supply agencies, and researchers and planners from

other organizations concerned with drainage. The committee meets quarterly to disseminate and discuss current information regarding evaporation ponds.

In addition, the Department is conducting various studies relating to the environmental impacts of evaporation ponds. An assessment of the cumulative impacts on wildlife resulting from operating evaporation ponds in the San Joaquin Valley is being conducted in cooperation with the Central Valley Regional Water Quality Control Board and the Central Valley Agricultural Pond Operators. The final report is scheduled to be published in fall 1991.

The Department is also funding two studies being conducted by the U.S. Fish and Wildlife Service. The studies, expected to be completed within the next three years, are specifically designed to assess the impact of ponds on wildlife. One study, initiated in October 1990 by the State-Federal San Joaquin Valley Drainage Program, is designed to examine the effects of evaporation pond contaminants on the reproduction of shore birds; the other, to assess the net impacts of ponds on various species of water birds.

Station Number and Name	
C3	Sacramento River at Greens Landing
C7	San Joaquin River at Mossdale Bridge
C9	West Canal at mouth of intake to Clifton Court Forebay
C10	San Joaquin River near Vernalis
D4	Sacramento River above Point Sacramento
D6	Suisun Bay off Bulls Head Point near Martinez
D7	Grizzly Bay at Dolphin near Suisun Slough
D8	Suisun Bay off Middle Point near Nichols
D9	Honker Bay near Wheeler Point
D10	Sacramento River at Chipps Island
D11	Sherman Lake near Antioch
D12	San Joaquin River at Antioch Ship Channel

Station Number and Name	
D14A	Big Break near Oakley
D15	San Joaquin River at Jersey Point
D16	San Joaquin River at Twitchell Island
D19	Franks Tract near Russo's Landing
D22	Sacramento River at Emmaton
D24	Sacramento River below Rio Vista Bridge
D26	San Joaquin River at Potato Point
D28A	Old River opposite Rancho Del Rio
D41	San Pablo Bay near Pinole Point
MD7A	Little Potato Slough at Terminous
MD10	Disappointment Slough at Bishop Cut
P8	San Joaquin River at Buckley Cove
P10A	Middle River at Union Point
P12	Old River at Tracy Road Bridge

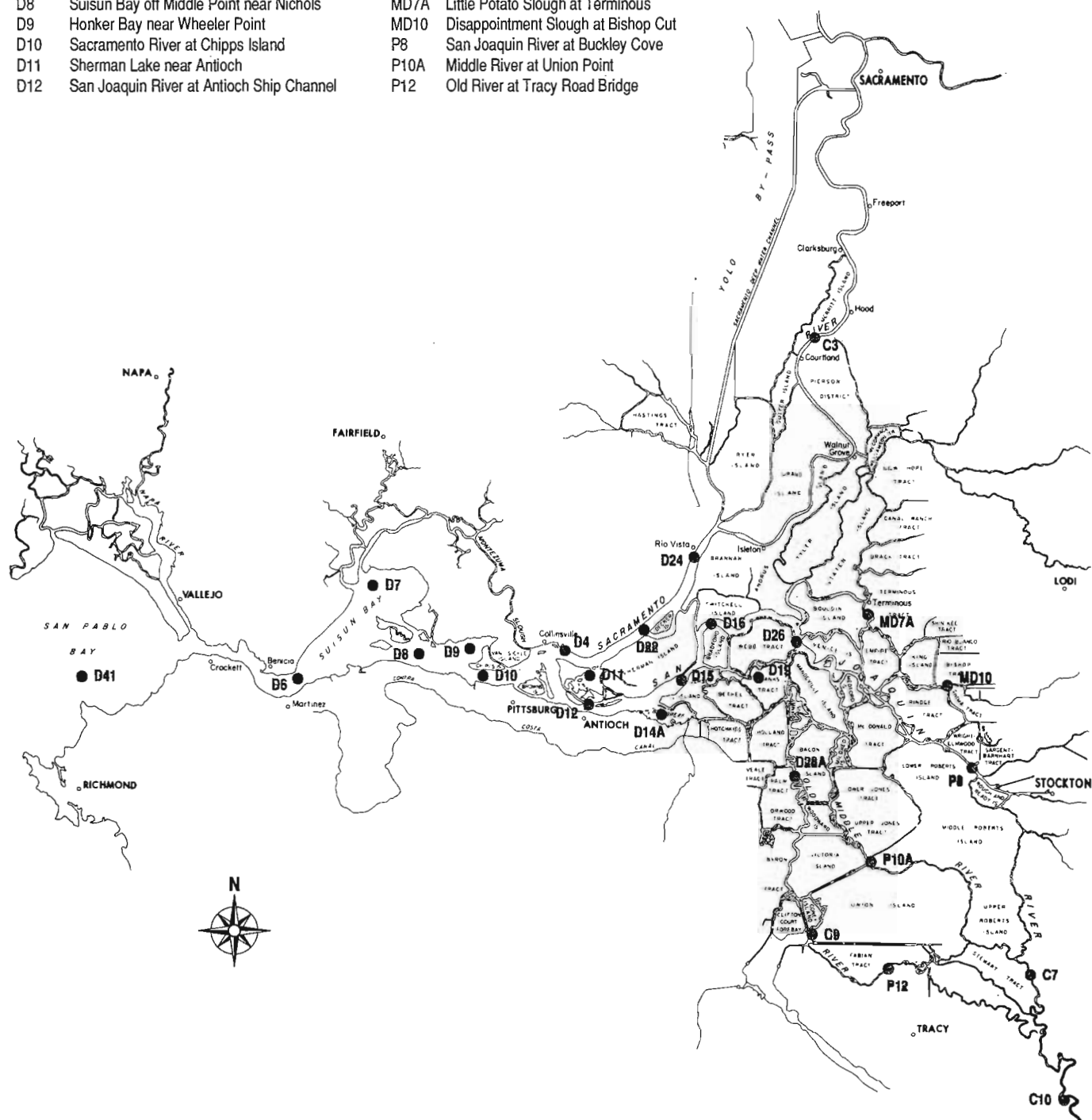
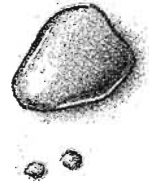


Fig. 17. Water quality monitoring sites in Sacramento-San Joaquin Delta



# 13. Protecting Fish, Plants, and Wildlife



SEVERAL PROGRAMS TO ELIMINATE, minimize, or offset any adverse environmental impacts during the operation and maintenance of the State Water Project (SWP) have been developed by the Department of Water Resources.

Those programs, often involving protection of fish, wildlife, and other natural resources, are accomplished in addition to environmental documentation and mitigation activities required when proposals for new facilities or modifications to existing facilities are being evaluated.

Programs developed by the Department include examining routine operating procedures, determining their environmental impact, and developing plans to ensure compliance with environmental regulations; mitigating the impact of SWP's operations on fish and offsetting losses; and identifying and protecting recently listed threatened and endangered species in Suisun Marsh.

Information on those programs follows.

## Case-by-Case Reviews

To minimize environmental impacts along the California Aqueduct right-of-way, the Department adopted a program of assigning environmental specialists from districts to work with field division staff members to examine routine operation and maintenance procedures and determine their impact

on streambeds, wetlands, and threatened or endangered species.

As a result of the examinations, many operations and maintenance activities are allowed to proceed as scheduled; some are modified to avoid impacts; and some activities require mitigation.

In addition to case-by-case reviews, environmental specialists are working with field division staff members and representatives of the fish and wildlife agencies to develop a long-term plan to help ensure compliance. Specifically, the Department's goals are to:

1. Identify projects that do not threaten endangered species.
2. Identify projects in which adverse aspects may be avoided (chopping weeds instead of spraying them with herbicides, for example).
3. Develop mitigation measures for those projects that result in unavoidable takes of listed plants or animals.

The Department also has adopted *Water Resources Engineering Memorandum 58*, which includes provisions for the Department to designate an environmental coordinator for each new project. The coordinator's primary function is to monitor projects from inception to completion and through operation and to ensure that agreed-on mitigation measures conform to those specified in the environmental documentation.

THE  
DEPARTMENT  
OF WATER  
RESOURCES  
MONITORS  
PROJECTS  
FROM  
INCEPTION TO  
COMPLETION  
THROUGH  
OPERATION TO  
ENSURE FISH,  
PLANTS,  
WILDLIFE,  
AND OTHER  
NATURAL  
RESOURCES  
ARE  
PROTECTED.

## Mitigations

In 1990, as part of its activities to eliminate, minimize, or offset adverse environmental impacts, the Department has focused particular attention on:

1. Assessing the impact of SWP's operations on two fish, the Chinook salmon and the Delta smelt, listed or proposed for listing as a threatened or endangered species
  2. Offsetting the direct losses of fish at Harvey O. Banks Delta Pumping Plant
- Information on those activities follows.

### Assessments

In addition to numerous plants and terrestrial animals that have been listed or are candidates for listing according to the state and federal endangered species acts, two fish—the Chinook salmon and the Delta smelt—are receiving increasing attention from the Department and from water project planners, operators, and customers as well.

#### Chinook Salmon

In 1990 the winter race of the Chinook salmon (*Oncorhynchus tshawytscha*), which is listed as *threatened* by the federal government and *endangered* by the state, remained at low levels. The 1990 spawning population was estimated by the Department of Fish and Game (DFG) to be 441, down from tens of thousands in the 1960s and early 1970s.

The continuing drought in 1990 caused increasing stress on the population; and as a result, the U.S. Bureau of Reclamation (USBR) modified its Central Valley Project operations to provide cold water to the upriver spawning and nursery grounds and reduce delays of spawners at the Red Bluff diversion dam. Measures were also taken to reduce catch of winter-run adults by commercial and recreational anglers.

The Department expects to complete analyses of the impacts of our Delta operations on winter-run salmon in 1991.

## Delta Smelt

The second fish of potential importance to project operation is the Delta smelt (*Hypomesus transpacificus*). That small fish is found only in the Sacramento-San Joaquin estuary and has been at low levels since 1982.

In August 1990 a petition to the California Fish and Game Commission to list the animal as endangered was denied. The Commission instructed the Department and others to conduct additional studies to determine the status of the smelt's population and factors contributing to its decline. Those studies were started in fall 1990 and are expected to continue for at least four years.

In June 1990 the California-Nevada Chapter of the American Fisheries Society submitted a petition to the U.S. Fish and Wildlife Service (USFWS) to list the Delta smelt as endangered.

The petition was accepted by the USFWS on December 24, 1990. Although USFWS was required to propose or deny listing by June 26, 1991, it had not announced a decision by that date. If listing is proposed, USFWS will have up to one year from the date of the proposal to officially list the fish as threatened or endangered.

Although the cause of the decline was not demonstrated in the evidence presented for listing the fish, the petitioners implicated water development as the cause of decline. If Delta smelt is listed, planning for and operating the State Water Project will become more difficult because the smelt spends much of its one-year life cycle within the draft of the pumps of Harvey O. Banks Delta Pumping Plant.

### Offset for Losses

Another important area of environmental activity involves offsetting the direct losses of fish at SWP's Banks Pumping Plant. To protect fish, the Department constructed the John E. Skinner Delta Fish Protective Facility two miles from the Banks Pumping Plant near Byron.

The facility consists of a giant fish screen designed to keep small migrating fish away from the pumps that lift the water into the California Aqueduct. A system of louvers in the intake channel, while allowing water to pass through to the pumps, creates turbulence along the screen.

As fish sense the turbulence, they move away from the screen and downstream toward bypass pipes that lead to a secondary louver system, which, in turn, diverts the fish into four nearby holding tanks. The louvers are only effective for fish longer than about one inch.

When enough fish have accumulated in the holding tanks, they are transported downstream in the Delta and released beyond the influence of pumping at the plant. Common species of fish collected at the Skinner Fish Facility include carp, striped bass, channel catfish, Pacific lamprey, Chinook salmon, and American shad.

### ***Pumping Plant Agreement***

Although the Skinner Fish Facility significantly reduces the number of fish lost at SWP's Delta pumps, some fish continue to be lost. Consequently, in December 1986 the Department and DFG signed an agreement designed to offset the direct losses of fish at the intake of Banks Pumping Plant. According to the agreement, the Department has the responsibility for offsetting the losses by either increasing the natural survival rate of the fish or stocking them directly in rivers or in the Bay and Delta.

The Department's program to offset losses consists of two components:

1. Annual loss mitigation account
2. Lump-sum account, originally funded at \$15 million, to fund projects with significant but unquantifiable benefits and projects that should provide rapid increases in fish population

Although all fish are covered by the agreement, initial efforts have been directed toward Chinook salmon, striped bass, and steelhead rainbow trout. Using calculations based on the number of fish

salvaged at the Skinner Fish Facility, DFG annually estimates the direct losses of those fish. Since 1986, DFG has been calculating the number of fish lost and estimates the average annual losses to be approximately 600,000 striped bass yearling equivalents; 1,700,000 Chinook salmon smolts; and 17,000 steelhead yearlings.

### ***Funded Activities***

Through 1990, funds from the annual account have been used to:

- Purchase yearling steelhead and striped bass.
- Plant yearling striped bass.
- Improve spawning gravel in streambeds.
- Modernize the Merced River Fish Facility.

By the end of 1990, the Department's obligation for striped bass and steelhead was reduced to near zero. The annual account for salmon remained out of balance with a deficit of about 5 million smolts. Existing and proposed hatchery and habitat projects on the Feather, Merced, Tuolumne, and Stanislaus rivers are expected to erase this deficit within the next few years.

In 1990 three activities were funded through the lump-sum account:

1. Placing about 100,000 cubic yards of spawning gravel in the Sacramento River near Redding
2. Purchasing 1 million striped bass yearlings for planting in the estuary
3. Completing a well field (conjunctive use) project on Mill Creek

About \$3.5 million of the original \$15 million in this account has been spent and another \$2.5 million has been obligated for purchasing striped bass and constructing a fish screen in Suisun Marsh to reduce fish losses at an existing diversion.

### ***Additional Negotiations***

The December 1986 agreement signed by the Department and DFG included a provision, Article VII, that required an additional agreement between the two agencies to mitigate for the indirect impacts on fish due to pumping.

The second agreement must be signed before the Department can increase pumping from the Delta beyond limits specified in its present permit issued by the U.S. Corps of Engineers.

The negotiations, which have been expanded to include USBR, were convened monthly in 1990 to quantify indirect impacts and to develop a statement of understanding designed to set bounds on the negotiations. The statement of understanding was signed by directors of the three negotiating agencies in October 1990.

The monthly negotiating meetings, attended by members of a wide variety of water, regulatory, and environmental organizations, have provided a forum for discussing environmental concerns in the Delta.

## *Plants and Wildlife*

In 1987 the Department, USBR, DFG, and the Suisun Resource Conservation District signed the

Suisun Marsh Preservation Agreement and requested that the State Water Resources Control Board incorporate the standards contained in the agreement into a revised San Francisco Bay-Delta Water Quality Control Plan and Water Right Decision. Consequently, an updated biological assessment was required.

In 1990 the first field surveys associated with the new biological assessment were conducted. The assessment is expected to take about three years to complete. Concurrent with the field surveys, results will be analyzed and as a result of adopting preservation agreement standards, determinations made to identify any impacts on threatened or endangered species, including the six species listed since the agreement was signed in 1986.

## *Part IV.*

# *Meeting Future Water Needs*

### **14. Forecasting Water Delivery**

#### **Capabilities 109**

Forecasting Delivery Capabilities 109

Allocating Entitlement Water 110

### **15. Increasing Storage and Delivery**

#### **Facilities 113**

Storage Facilities 113

Red Bank Project 113

First Studies 113

Current Studies 114

Los Banos Grandes Facilities 114

Site Description 114

Feasibility Studies 115

Project Description 115

Mitigation Measures 116

Kern Water Bank 117

Kern Fan Element 117

Local Elements 117

Environmental Documentation 118

Groundwater Demonstration Program 118

Delivery Facilities 119

Assessments 119

Construction 119

### **16. Augmenting the Water Supply 121**

Cloud Seeding 121

Project Design 121

Operation 122

Conjunctive Use of Water 122

Participants 122

Project Alternatives 122

Environmental Documentation 123

Water Transfers 123

Water Transfers Committee 123

Purchases 124

Exchange Programs 124

Drought Water Bank 124

### **17. Assisting Local Water Supply**

#### **Projects 127**

Davis-Grunsky Act 127

Basic Provisions 127

Current Activities 128

State Water Project Funds 128

Funding Assumptions 129

Enlargement of Cachuma Reservoir 129

Study Objectives 129

Environmental Review Process 129

### **18. Securing Power Resources 131**

Facilities 131

Hydroelectric 131

Devil Canyon Powerplant 133

Mojave Siphon Powerplant 133

San Luis Obispo Powerplant 133

Coal 133

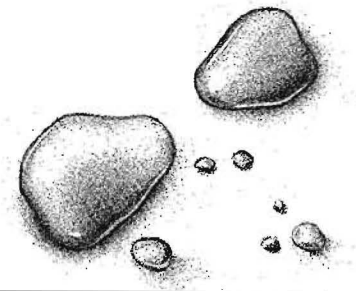
Geothermal	133
Bottle Rock Powerplant	133
South Geysers Powerplant	134
Mineral Rights	134
Transfers, Exchanges, and Purchases	134
Transfers	135
Exchanges	135
Southern California Edison	135
Metropolitan Water District of Southern California	135
Other Pacific-based Utilities	136
Purchases	136
Long-Term Purchases	136
Short-Term Purchases	136
Transmission Services	136
Reinforcements	137
Transmission Capacity	137

## **19. Forecasting Power Requirements, Resources, Costs, and Sales 141**

Requirements and Resources	141
On-Peak	142
Off-Peak	143
Costs	143
Costs of Pumping	143
Average Unit Costs	144
Composite Resource Costs	144
Net Costs	144
Sales	144



# 14. Forecasting Water Delivery Capabilities



**F**ORECASTING WATER DELIVERY capabilities is an integral and necessary part of the Department of Water Resources' water management plan. The State Water Project (SWP) does not have the storage facilities, delivery capabilities, or the water supplies necessary to deliver full amounts of entitlement water.

Consequently, the Department must annually determine the risk of delivering water instead of storing it for future use. And once the amount of water to be delivered is determined, the Department must review contractors' annual requests for water and determine amounts it reasonably expects can be delivered.

This chapter includes information about the methods used by the Department to forecast delivery capabilities and approve amounts of entitlement water to be delivered.

## *Forecasting Delivery Capabilities*

The Department uses a delivery risk analysis procedure to assist in determining the amount of water approved for delivery by SWP each calendar year. The delivery risk analysis procedure was developed over a number of years through extensive hydrologic probability analysis and discussions with SWP's water contractors.

The delivery risk analysis procedure is based on the relationship between four variables:

1. Water supplies forecasted at a certain level of probability for the current water year
2. Current amount carry-over storage
3. Targeted amount of end-of-year carry-over storage
4. SWP's total delivery capability for the calendar year<sup>1</sup>

Water delivery estimates for the current year are based on half the amount of active storage at Oroville and San Luis reservoirs; delivery estimates for subsequent years are based on the remaining half.

The Department's objective in formulating and using the risk analysis procedure is to ensure that:

1. Sufficient carry-over storage will be maintained.
2. Next year's requirements to protect water quality in the Delta will be met.
3. At least an emergency level of water deliveries could be made in the following year without the need for extraordinary measures.

WITHOUT SUFFICIENT STORAGE AND DIVERSION CAPABILITIES, THE DEPARTMENT MUST DETERMINE EACH YEAR THE RISK OF DELIVERING WATER INSTEAD OF STORING IT FOR FUTURE USE.

<sup>1</sup>Since 1978 SWP's operational decisions have been based on the annual analysis of the risk of delivering water instead of storing it for future use. Such an analysis provides the Department with a rational means of deciding the amount of water to deliver in a given year and the amount to leave in storage to provide for dry periods. That procedure, previously known as the Rule Curve, has been modified in 1985, 1989, and 1990. See pages 86 and 87 of Bulletin 132-90, *Management of the State Water Project*, for additional information about those modifications.



Using the delivery risk analysis procedure has enabled SWP to meet all requests under contractual obligations during 1987, 1988, and 1989, even though those were the sixth-driest consecutive three years since 1906.

The 1991 delivery risk analysis procedure was based on similar operating and decision-making criteria used in 1990, except that in 1990 storage reserves included 98,000 acre-feet of water purchased from La Hacienda, Inc., and 150,000 acre-feet recharged as part of the 1990 Groundwater Demonstration Program with the Kern County Water Agency.

The effect on the delivery risk analysis of purchasing groundwater from La Hacienda, Inc., was to increase the amount of water available for carry-over storage. Although 98,000 acre-feet was purchased, 50,000 acre-feet was assumed to be extractable from the basin in the first year in which the water was needed in lieu of surface water deliveries.

In applying the delivery risk analysis, the Department assumed that the water purchased from La Hacienda would be extracted after storage in San Luis Reservoir was exhausted and Oroville storage was at minimum power pool. Therefore, surface water storage could be drafted 50,000 acre-feet lower because of the purchase and the Department could still retain the same amount of carry-over water.

The impacts of the 1990 groundwater demonstration programs on the delivery risk analysis were similar to the impacts of the La Hacienda purchase in that water in storage was assumed to have increased. For example, 9,500 acre-feet of water was delivered to Berrenda Mesa, a member unit of the Kern County Water Agency, in exchange for water that can be extracted from Berrenda Mesa's groundwater basin when needed, using the Department's facilities.

Other groundwater demonstration programs result in increased storage, but unlike the programs involving La Hacienda or Berrenda Mesa, water delivered in 1990 to agencies participating in those

programs is classified as "predelivery of entitlement." Consequently, in a year when the Department needs water, entitlement deliveries to the participating agencies are reduced and the agencies extract groundwater from their groundwater basins to replace the reductions in allocations from SWP. The amount retrievable in any one year is related to the amount of entitlement allocated to the agency and the agency's own extraction capability.

Therefore, in applying the delivery risk analysis, the Department assumed a sliding scale of extractable amounts depending on the amounts of (1) allocations of entitlement water to agricultural contractors; and (2) water that participating agencies could physically extract from their groundwater basins. Those amounts vary from about 8,740 acre-feet (9,500 acre-feet from Berrenda Mesa minus losses) to about 69,000 acre-feet.

## *Allocating Entitlement Water*

Each year SWP contractors submit a request for entitlement water for the next five years.

In fall 1990, SWP contractors submitted their requests for entitlement water for years 1991 through 1995. The amounts of those short-term requests may be found in Table 21, "Six-Year Comparison of Total Yearly Amounts of Entitlement Water Requested with Total Amounts Possible to Request, 1990 Through 1995." The amounts shown in Table 21 include amounts of deferred entitlements. In addition, contractors submit an estimate of their long-term water requirements every three years.

The contractors' long-range projections for entitlement water are shown in Table B-5B of Appendix B, *Data and Computations Used in Determining 1992 Water Charges*.

Amounts of entitlement water initially requested by contractors in 1990 for delivery in 1991 totaled 3,858,328 acre-feet. That amount of water included 2,374,892 acre-feet classified as municipal and industrial and 1,483,436 acre-feet classified as agricultural water.

TABLE 21  
**Six-Year Comparison of Total Yearly Amounts of Entitlement Water Requested  
 with Total Amounts Possible to Request, 1990 Through 1995**  
 (Acre-feet)

<i>Year Water to Be Delivered</i>	<i>Year Request Submitted</i>						<i>Total Amounts Possible to Request According to Long- Term Contracts</i>
	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>	
1990	2,849,832	2,935,137	3,106,033	3,141,560	3,218,790		4,108,321
1991		2,972,543	3,152,935	3,157,424	3,469,231	3,858,328	4,130,856
1992			3,281,998	3,313,605	3,549,410	3,861,393	4,138,816
1993				3,362,707	3,596,715	3,978,636	4,146,966
1994					3,643,810	3,858,150	4,154,201
1995						3,860,583	4,163,066

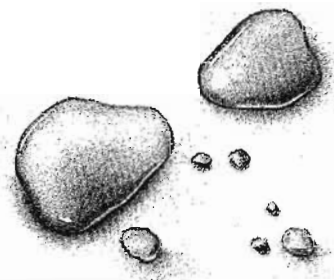
According to initial operation studies completed in November 1990 based on the delivery risk analysis procedure, the initial allocation announced by the Department on December 1, 1990, provided for 85 percent of the municipal and industrial requests and 65 percent of the agricultural request.

Because of the continuing drought during December 1990 and January 1991, combined with low conservation storage in San Luis and Oroville reservoirs, agricultural allocations were reduced by 100 percent of the initial request and municipal and industrial allocations, by 50 percent in early February 1991.

By late February, the municipal and industrial allocations were further reduced to 10 percent of requests. During March 1991 there were significant statewide storms, and the amounts of 1991 municipal and industrial allocations were increased to 20 percent. During the summer months, the Department was considering increasing municipal and industrial allocations to 30 percent of the original requests, which would result in the 671,711 acre-feet of water being allocated for municipal and industrial purposes in 1991.



# 15. Increasing Storage and Delivery Facilities



**T**O MEET THE WATER DELIVERY GOALS stated in its water service contracts, the Department of Water Resources needs to construct additional storage and delivery facilities.

In planning for and developing storage and delivery facilities, however, the Department often faces two significant challenges: finding technically suitable sites and satisfying the many complex environmental procedures, laws, and regulations.

Information on constructing storage and delivery facilities may be found in this chapter.

## *Storage Facilities*

Currently, planning activities are under way on projects designed to increase State Water Project (SWP) storage. Specifically, these facilities are designed to:

- Provide SWP with an additional water supply north of the Delta (Red Bank Project).
- Provide offstream storage south of the Delta (Los Banos Grandes facilities and Kern Water Bank).

### *Red Bank Project*

The largest uncontrolled tributary of the Sacramento River, Cottonwood Creek, in Shasta and Tehama counties, is the primary cause of flooding

along the lower Cottonwood Creek and upper Sacramento River.

In 1964 the U.S. Corps of Engineers selected the Cottonwood Creek drainage basin as the most suitable for constructing facilities to provide flood protection as well as an additional water supply.

Since then, both the Corps and the Department have conducted studies to determine the most efficient and economical means of constructing those facilities. The Department's activities have been identified as the Red Bank Project.

### *First Studies*

In 1985 the Department published a report in which it recommended studying construction of a:

1. Combination diversion and storage dam at the Dippingvat site on the south fork of Cottonwood Creek
2. Storage dam and reservoir at the Schoenfield site in the adjacent Red Bank Creek Basin
3. Conveyance system for connecting the two reservoirs

Following recommendations included in that 1985 report, the Department conducted a two-year prefeasibility investigation to determine:

- Project costs
- Flood control benefits
- Amount of water that would be added to SWP's supply

TO MEET ITS WATER DELIVERY GOALS, THE STATE WATER PROJECT MUST CONSTRUCT ADDITIONAL STORAGE FACILITIES.

Through conducting the investigation, the Department determined that the cost of constructing the dams and reservoirs would be \$90 million (1987 dollars) and that the project would provide the following benefits:

- Approximately 47,000 acre-feet of additional water to SWP
- An annual flood control benefit of about \$2.4 million for the Cottonwood Creek Basin
- Warm-water fishery and other recreational facilities (approximately 113,000 recreation days per year)

Basing its actions on the information contained in the 1987 report, the Department immediately began a feasibility study for constructing a dam and reservoir on the south fork of Cottonwood Creek (Dippingvat) and a dam and reservoir on Red Bank Creek (Schoenfield). Those two reservoirs would be connected by a tunnel and two sections of open channel.

### *Current Studies*

In fiscal year 1990-91 the Department completed 90 percent of the topographical mappings; published a report of drilling investigations; and prepared a draft fault investigation report.

During the 1991-92 fiscal year, the fault investigation report was finalized and alternative dam types were investigated. As currently envisioned by the Department, the Dippingvat Dam would be about 260 feet high with a reservoir capacity of 104,000 acre-feet; the Schoenfield Dam, about 300 feet high with 250,000 acre-feet of storage capacity.

The Department also determined the Cottonwood Creek site to be a good potential source of water but only a fair site for a reservoir and the Red Bank Creek site, a good reservoir site but not a potential source of water. Consequently, the Red Bank Project, designed to account for the strengths and weaknesses of each site, offers a good source of water and a good reservoir storage site at a reasonable cost.

In addition, the Department determined that the project could provide significant benefits to the anadromous fisheries in lower Cottonwood Creek through an improved water supply. And at the Red Bluff Diversion Dam, the period of time that gates remain open could be extended to facilitate the upstream migration of salmon.

According to initial estimates of the unit water costs, the Red Bank Project will be competitive with other currently proposed water supply projects, including the Los Banos Grandes facilities and the elements of the Kern Water Bank.

### *Los Banos Grandes Facilities*

To more efficiently manage its water supply, the Department has proposed for development the Los Banos Grandes offstream reservoir complex. Once constructed, the facilities would serve as a south-of-the-Delta water bank. Water stored in Los Banos Grandes would be pumped from the Delta and conveyed southward about 80 miles through the California Aqueduct.

A description of the project as well as of the environmental mitigation and conservation measures proposed by the Department follows.

### *Site Description*

The Department examined several sites on which to construct offstream storage facilities before deciding on the Los Banos Creek site, a relatively undeveloped area in western Merced County.

The area, predominantly privately owned grassland, is primarily used for cattle grazing. Annual rainfall in the area is about 9 inches and generally occurs between December and March. Summers are hot and dry. The annual runoff of Los Banos Creek has been estimated at about 50,000 acre-feet (1983) and averages about 8,000 acre-feet. There is little flow from May through November of most years.

Although four or five farmsteads remain within the area of the proposed reservoir, none is perma-

nently occupied. An unpaved county road crosses the upper end of the project area, but public access to most of the area is minimal. Within the area developed water supplies for irrigated agriculture do not exist, but about 900 acres have been cultivated for production of dry-farmed grain.

Several shallow wells have been developed to provide water for stock and for domestic use. The pumps are wind-powered; and the area is not served by a commercial electric utility.

### *Feasibility Studies*

In 1984, once the site was selected, the Department began its feasibility studies. At that time, the U.S. Bureau of Reclamation (USBR) expressed an interest in participating in the project, and a design to include reservoir storage capacity of up to 300,000 acre-feet for use by the Central Valley Project (CVP) was incorporated into the project.

During this time, the Department decided to evaluate the possibility of participating with a private utility for power generation as a joint SWP/private utility project. Two utilities expressed interest in participating in the project, Pacific Gas and Electric (PG&E) and Southern California Edison (SCE).

Consequently, three formulations were prepared for the reservoir, a 1.73 million acre-feet SWP-only project; a 2.03 million acre-feet joint SWP-CVP project; and a 2.03 million acre-feet joint SWP-power utility pumped-storage option.

In 1990 USBR withdrew from the project. Consequently, in preparing its environmental impact and feasibility reports, the Department selected a reservoir capacity of 1.73 million acre-feet for the SWP-only formulation and recommended pursuing a joint venture with a private utility. The reports were released in December 1990.

Early in 1991, PG&E and SCE notified the Department that they were no longer interested in participating because of the high costs of generating power. Therefore, at this time, the Department is concentrating on developing the 1.73 million

acre-feet SWP-only facility. Information on that facility follows.

### *Project Description*

The main dam, which would be located on Los Banos Creek, would be a zoned embankment with a height of 414 feet above the original streambed. Total volume of the embankment would be 13 million cubic yards. The major saddle dam located two miles south of the main dam on Salt Creek (another drainage within the proposed reservoir) would require approximately the same volume of embankment as the main dam.

Water would be lifted about 130 feet from the California Aqueduct to the existing Los Banos Reservoir (a 34,600-acre-foot flood detention reservoir constructed to protect the aqueduct) by a proposed pumping-generating plant located downstream of the reservoir.

A second pumping-generating plant at the base of Los Banos Grandes Dam, operating under a maximum static head of 435 feet, would lift water into Los Banos Grandes Reservoir. Both plants would have a design capacity of 3,500 cubic feet per second (cfs) in the pumping mode and 4,650 cfs in the generating mode.

Designs and cost estimates for the project were initially prepared for a range of sizes for the reservoirs and associated pumping-generating plants. The first costs at October 1989 prices (not including mitigation/compensation measures or costs of recreational facilities) were estimated to range from about \$450 million for a 1.2 million-acre-foot basic water supply project to over \$1.1 billion for a staged project incorporating 420 megawatts of pumped-storage power capacity.

With the selection of the 1.73 million-acre-foot capacity reservoir for the SWP-only formulation, those costs were refined. The feasibility-level first costs (including costs of mitigation/compensation measures and recreation costs) for the 1.73 million acre-feet alternative were estimated at \$890 million.

The Department plans to complete the mitigation plan and obtain all necessary environmental permits and agreements by June 1992. A decision to proceed to final design and construction would then be made in summer 1992. Based on the schedule previously outlined, the Los Banos Reservoir could be operational by the year 2002.

### ***Mitigation Measures***

Extensive field inventories have been undertaken to help evaluate environmental impacts. As part of a contract with the Department, the Department of Fish and Game conducted a four-year assessment of fish and wildlife. In addition, Department of Water Resources' botanists classified the habitat types to be affected if the project were built and surveyed the area for plant species of special concern.

By studying the assessments conducted as part of the feasibility investigation, the Department identified three crucial environmental concerns that must be considered before the project can be built:

- Threatened and endangered species
- Wetlands
- Sycamore alluvial woodlands

Each is a subject of a federal or state law or regulation.

*Threatened or Endangered Species.* Five state-listed or federally listed threatened or endangered species of wildlife are known to occur in the project area: the San Joaquin kit fox; Swainson's hawk; bald eagle; peregrine falcon; and greater sandhill crane. Other species of wildlife and plants appearing in the area are candidates for listing, including the San Joaquin pocket mouse, golden eagle, California tiger salamander, red-legged frog, southwestern pond turtle, and Arburua Ranch jewel flower.

Generally, the federal Endangered Species Act forbids actions by federal agencies, including the granting of licenses or permits, that would jeopardize the continued existence or adversely affect the critical habitat of any listed species. Therefore, wildlife inventory studies have been completed;

and mitigation and compensation measures are being studied.

*Wetlands.* Although the project site is in an arid zone, areas within it are classified as wetlands under the U.S. Corps of Engineers' criteria for administering Section 404 (b) (1) of the federal Water Pollution Control Act. Those areas include portions of Los Banos Creek near the dam site and numerous small areas of seasonal marsh associated with stock water ponds or small springs and seeps.

According to federal regulations, the U.S. Corps of Engineers may issue a permit for a project that would destroy a wetland site only if no practicable alternative with less adverse environmental consequences exists. A consulting firm, EBASCO Environmental, was hired to help define the impact of the project on wetlands and recommend mitigation and compensation measures.

At the same time, the Department reexamined and expanded studies to determine practicable alternatives to the project that would not affect wetlands or have other significant adverse environmental consequences.

As a result of those studies, the Department concluded that the Los Banos Grandes facilities offered the only practicable south-of-the-Delta surface storage alternative. That conclusion, presented in September 1990 as part of the *Los Banos Grandes Facilities Alternatives Analysis Memorandum Report*, was based on findings that other alternatives would cost at least two to three times as much as the cost of constructing the Los Banos Grandes facilities.

*Sycamore Alluvial Woodlands.* To build the Los Banos Grandes facilities, about ten miles of Los Banos Creek must be inundated. The lower six miles of that reach is a broad alluvial floodplain that supports an extensive stand of California sycamores.

The strip of sycamores averages about 800 feet in width and covers approximately 600 acres. Typically, the trees are large, with trunk diameters averaging 16 inches and ranging to over 4 feet. Some areas are dense with trees, but much of the area is



fairly open. Average canopy cover is about 30 percent.

The sycamore woodland, surrounded by relatively barren grasslands, has substantial value as a wildlife habitat. Compensation through replacement or improvement of a comparable habitat will be a challenge because the Los Banos Valley sycamore grove is reportedly the largest in the area. The California sycamore is not considered a threatened or endangered species, but the wildlife habitat it provides is relatively scarce in the San Joaquin Valley.

According to provisions of the federal Water Pollution Control Act, the Environmental Protection Agency may ban use of a site determined to have an unacceptable adverse effect on wildlife. To determine the most effective methods of restoring or creating sycamore woodland habitats, the Department developed a pilot program to evaluate survival parameters for over 1,200 sycamores, ranging in size from seedlings to established trees. The information gained from that program will be used to develop a mitigation plan.

### ***Kern Water Bank***

The Kern Water Bank, a conjunctive-use groundwater program, is designed to allow SWP's water to be recharged into the groundwater basin during wet years and withdrawn by pumping or through exchanging entitlement water during dry years.

The program consists of eight separate projects or elements. One element, the Kern Fan Element, is owned by the Department. The other seven elements, referred to as local elements, will be owned by Kern County water districts and planned in cooperation with the Department.

#### ***Kern Fan Element***

The Kern Fan Element is designed to be completed in two stages. The first stage will have a storage capacity of about 350,000 acre-feet and an expected average annual yield of about 44,000 acre-feet per year. The second stage is designed to

increase the storage capacity to about 1 million acre-feet; a proportional increase in average annual yield is anticipated.

Planning activities for the second stage of the Kern Fan Element will begin once the environmental impact report for the first stage of the project is completed. Construction of the second and ultimate phase facilities is targeted for 1995.

### ***Local Elements***

The local elements of the Kern Water Bank, designed to add about 2 million acre-feet of groundwater storage and increase the average annual yield of the Kern Water Bank to about 200,000 acre-feet per year, are in various stages of planning.

As of the end of the 1990-91 fiscal year, prefeasibility studies have been completed for local elements sponsored by Kern Delta Water District, Improvement District Number 4, and Rosedale Rio-Bravo Water Storage District. The report, *Components of Feasibility Study*, was completed for the Semitropic Water Storage District.

An initial draft prefeasibility study for a local element jointly sponsored by Buena Vista Water District and West Kern County Water District was completed in December 1990, and a draft prefeasibility study for Cawelo Water District local element was completed in July 1991. A prefeasibility study of a local element sponsored by North Kern Water Storage District was begun in mid-1991 and should be completed by the end of the 1991-92 fiscal year. No other local elements are under consideration at this time.

A master plan to include criteria for marshaling studies for the local elements through the planning and implementation process is being prepared by sponsors of the local elements and other interested agencies.

The schedule for preparing additional feasibility studies and documentation required according to the California Environmental Quality Act (CEQA) and for scheduling construction of the local elements will be based on the adopted master plan.

### ***Environmental Documentation***

A supplemental environmental impact report (EIR) for the Kern Fan Element was prepared according to CEQA guidelines and distributed for review on December 31, 1990.

A hearing was held in Bakersfield on January 28, 1991. Three individuals provided comments at the hearing; comments were generally favorable. Ten individuals or organizations responded to the EIR with written comments. Responses to the comments are being prepared; and a final EIR is targeted for release in February 1992.

As a result of construction, operation, and maintenance activities pertaining to the Kern Fan Element, the Department is applying for permits for the incidental taking of threatened and endangered species from the U.S. Fish and Wildlife Service and the California Department of Fish and Game. Included in the permits are appropriate avoidance and mitigation procedures for incidental takes.

The U.S. Fish and Wildlife Service also requires that major activities planned by other agencies or companies on project lands be included in the permit. Activities planned by other participants include construction of additional recharge facilities (Kern County Water Agency) and oil and gas wells and related facilities (Atlantic Richfield Corporation).

The Department will coordinate the inputs from those agencies and companies as well as those from an independent land use advisory committee.

### ***Groundwater Demonstration Program***

In 1990 as part of its program to determine the feasibility of operating the Kern Water Bank, the Department delivered 140,500 acre-feet of entitlement water to the Kern County Water Agency for delivery to the member units in the future. The water was delivered according to terms of four separate agreements between the Department, Kern County Water Agency, and four member units of the Kern County Water Agency.

The Department paid a use-of-facility fee to use existing facilities; and in return, the member units

placed the water in storage in their respective groundwater basins or used it for irrigation in lieu of groundwater pumping and assigned a like amount of water from its groundwater basin to the Department.

The member units and the number of acre-feet of water they received include Semitropic Water Storage District, 105,500 acre-feet; Buena Vista Water District, 20,000 acre-feet; Rosedale-Rio Bravo Water Storage District, 7,500 acre-feet; and Kern Delta Water District, 7,500 acre-feet.

According to terms of the agreements, before the entitlement water is to be delivered and with 30 days' notice, the Department may reduce by up to 50 percent minus in-district losses the entitlement deliveries made in any one year from the Buena Vista, Rosedale, and Kern Delta elements.

The formula for determining the amount of entitlement water to be extracted from water stored by the Semitropic Water Storage District is to be based on the amount of deficiency water assigned to the district. After the amount of deficiency water is determined, the district may extract an amount equal to that reduction from its respective groundwater basin. The Department then will have access to an amount of entitlement water equal to the amount of the reduction available for distribution to other contractors.

According to the terms of a fifth agreement between the Department of Water Resources, Kern County Water Agency, and Berrenda Mesa Water District, the Department delivered 9,500 acre-feet of water to the agency for subsequent delivery to the district. The Department paid the cost of conveyance through the Dos Amigos Pumping Plant and paid Berrenda Mesa Water District \$26 per acre-foot for the water.

The district paid to have the water delivered from the California Aqueduct to its turnout on the Coastal Branch. In return, the district assigned a like amount of water from its groundwater storage account in the city of Bakersfield spreading basin to the Department.

According to the agreement, before the delivery of the water, any portion of the 9,500 acre-feet,

minus in-district losses, may be extracted in any one year.

## *Delivery Facilities*

The Department is completing advanced planning and environmental studies necessary to complete the second phase of the Coastal Branch of the California Aqueduct. Information on that project follows.

The Coastal Branch of the California Aqueduct, to be constructed in two phases, was designed to deliver water to agricultural water contractors in northwestern Kern County (first phase) and to Santa Barbara and San Luis Obispo counties (second phase). The first phase, completed in the late 1960s, includes two pumping plants and a 14.8-mile coastal stub canal extending from Avenal Gap to the vicinity of Devil's Den.

In October 1986 Santa Barbara County Flood Control and Water Conservation District and San Luis Obispo County Flood Control and Water Conservation District requested that the Department begin the advanced planning and environmental studies needed to complete the second phase of the aqueduct, which is designed to transport up to 82,700 acre-feet of entitlement water each year to those counties.

The water districts also requested that the Department conduct the environmental assessments and prepare the reconnaissance-level design of a local pipeline, the Mission Hills extension, to be used to transport SWP's water in northern Santa Barbara County.

### *Assessments*

Various alternative routes were considered for the pipelines and examined for topographical restrictions, design limitations, and related costs as well as for ways to minimize adverse environmental and social impacts. Once the route was selected, a 1-mile-wide corridor was studied in detail to determine the best alignment.

Wildlife habitats and biological communities within the corridors were mapped; archaeologists

conducted a detailed search of known cultural resources within the corridor; and geologists surveyed the substrata and topography within the corridor.

Five workshops were held with property owners along the corridor to inform them about the project and to learn about local problems the pipeline might cause. Environmental information as well as information gained from those studies and workshops were considered in the selection of and refinements to the alignment.

The final environmental impact report for phase two of the Coastal Branch and the Mission Hills extension was released on May 15, 1991. The two districts were notified, as required in paragraph 45(d) of the water supply contracts, that the Department will start final design on phase two in June 1992. The Department anticipates that in early 1992 contractors will indicate the amount of SWP water requested.

### *Construction*

Constructing phase two of the Coastal Branch requires laying 89 miles of buried pipeline from the existing terminus near Devil's Den to the Santa Maria River and constructing three pumping plants (Devil's Den, Bluestone, and Polonio Pass); one power recovery plant; and four water-storage facilities.

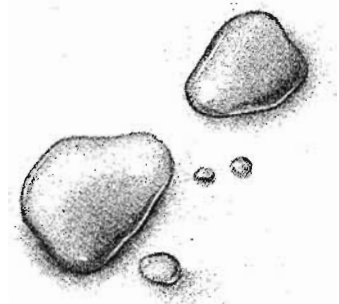
The power recovery plant, designed to dissipate the excessive water pressure in the pipeline, would generate up to 6.1 megawatts of energy.

Thirteen construction contracts are planned for the second phase. Four storage tanks along the pipeline will be used to segment the pipeline for flexibility in operating and maintaining it.

In 1990 the estimated cost of the project ranged from \$240 million to \$300 million. The unit cost of water from this project would vary from \$340 to \$420 per acre-foot per year, depending on the repayment reach and the delivery option selected. Costs for treating and transporting water to areas of use are not included.



# 16. Augmenting the Water Supply



**S**TATE WATER PROJECT (SWP) CONTRACTORS continue to need more water, but the overall supply of water is decreasing. For example, consumption of water upstream of the Sacramento-San Joaquin Delta continues to reduce the supply of water in the Delta. And the amount of water available to California from the Colorado River is decreasing as the Central Arizona Project, authorized by Congress in 1968, comes fully on line.

Coastal southern California, served by the Metropolitan Water District of Southern California, stands to lose half of its current entitlement of more than 1.2 million acre-feet as the Central Arizona Project becomes fully operational. Also, total water use in the urban areas served by SWP is increasing despite increasing conservation efforts.

To meet the increasing need for water, the Department of Water Resources' plans have evolved from conserving existing supply through storage to investigating cloud seeding; entering into programs with various water agencies in which the Department finances facilities in exchange for water (conjunctive-use); and developing programs to transfer water, primarily through purchases.

Information about programs the Department conducted or participated in from June 30, 1990, to June 30, 1991, are included in this chapter.

## *Cloud Seeding*

To increase the inflow to Lake Oroville Reservoir from the Feather River Basin, the major source of SWP's water, the Department is evaluating the effectiveness of cloud seeding.

Encouraged by the successful completion of a 1985 contract to study the feasibility of cloud seeding, the Department funded a prototype project to be carried out in a remote area of the Middle Fork Feather River near Johnsville. The project began in 1988, and the Department plans to use the information gathered from the project to evaluate the effectiveness of the cloud-seeding technique and design a larger cloud-seeding program to be conducted in the Feather River watershed.

## *Project Design*

The prototype project is designed to operate with ten propane dispensers installed on federal land managed by the U.S. Forest Service. Three dispensers were installed in November 1988 to permit evaluation of the functional capabilities of the equipment's control system and to provide information on the effectiveness of propane for increasing precipitation. Testing of the equipment continued through fall 1989.

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DECREASING  
WATER  
SUPPLY, THE  
STATE WATER  
PROJECT IS  
FOCUSING  
ATTENTION  
ON WATER  
TRANSFER  
PROGRAMS.

During that time, work began on preparing the environmental documentation required by the U.S. Forest Service to allow the installation of the seven additional dispensers. The environmental documents were completed on September 12, 1990.

On October 29, 1990, the California Sportfishing Alliance filed an appeal of the U.S. Forest Service's decision to issue the land use permit for the installation of dispensers. Consequently, the Forest Service issued a limited permit in which they authorized the installation but not the operation of the ten propane dispensers.

### *Operation*

As an alternative to operating the dispensers on federal land, the Department installed two propane dispensers on private property during winter 1990. During that time, the Department tested the effectiveness of controlled propane releases and evaluated the dispensing equipment and its remote control capabilities, which involved using satellites to communicate with Department headquarters in Sacramento.

Results of the tests indicated that the equipment could function as intended and could be reliably controlled from headquarters. Consequently, the Department decided in spring 1990 that the program could be fully implemented. However, the Department is waiting until the appeal by the Sport-fishing Alliance is settled before fully implementing the program because eight of the ten dispensers needed for full implementation are located on land managed by the U.S. Forest Service. As of June 30, 1991, the appeal had not been resolved.

### *Conjunctive Use of Water*

In 1986 two agencies in San Joaquin County, Stockton East Water District and Central San Joaquin Water Conservation District, presented a proposal to the Department for releasing Central Valley Project (CVP) water from the New Melones Dam in exchange for financing facilities.

Specifically, according to the proposal, the agencies would release downstream in the Stanislaus River as much as 145,000 acre-feet of the agencies' contracted water from CVP in years of critical shortages in exchange for SWP's financing of facilities in the Stanislaus and Calaveras river basins. Those facilities would be used to provide conjunctive use of water in the study area as well as benefits to fisheries, improved water quality, and increased yield to SWP's and CVP's contractors.

### *Participants*

In 1988, in response to the proposal, the Department, U.S. Bureau of Reclamation (USBR), and local water agencies agreed to investigate the future demands for water in the study area and the most efficient means of meeting those demands.

The Department and USBR prepared a work plan for that investigation; and a memorandum of understanding was signed by the Department; the Department of Fish and Game; USBR; Stockton East Water District; Central San Joaquin Water Conservation District; Calaveras County; Calaveras County Water District; Tuolumne County; Tuolumne Regional Water District; Stanislaus County; San Joaquin County; Lathrop County Water District; South Delta Water Agency; and the cities of Escalon, Ripon, Manteca, and Stockton.

Two irrigation districts with water rights to Stanislaus River water, Oakdale Irrigation District and South San Joaquin Irrigation District, have decided not to sign the memorandum of understanding but instead to monitor and provide input to the study.

### *Project Alternatives*

As part of the study process, alternatives to meet future estimated water demands are being identified. As part of selecting an alternative to meet water needs in the future, the Department will review all alternatives to determine the one that best:

- Meets the future water needs of all involved agencies and counties
- Improves in-stream flows for the Stanislaus, Calaveras, and San Joaquin rivers
- Improves water quality in the channels of the southern Delta
- Increases CVP and SWP water supplies in the Delta
- Assists in meeting outflow requirements in the Delta

### *Environmental Documentation*

In addition to identifying alternatives, the Department is preparing a draft environmental impact report/environmental impact statement. The document is scheduled for release in June 1993.

In 1990 the activities associated with preparing the environmental documentation involved the scoping process. A notice of preparation/notice of intent was issued in April 1990, and scoping meetings were held in Stockton and Sonoma in May 1990.

The scoping report was published in January 1991 and transmitted to all interested parties. Issues to be examined in the environmental documentation were identified in the report as well as the process used to identify issues and alternatives to be studied. A list of nine issues follows:

1. Conjunctive use of Stockton East Water and Central San Joaquin Water Conservation District's 145,000 acre-feet of contract water
2. County-of-origin water needs and protection
3. Fishery flows in the Stanislaus River
4. Groundwater levels in the eastern San Joaquin County's groundwater basin
5. Improved water quality at Vernalis on the San Joaquin River for the South Delta area
6. Protection of existing water rights
7. Return of interim out-of-basin contracted water to in-basin users when needed
8. Recreational needs in the Stanislaus River
9. Water supply to cities in the study area

Significant work accomplished as of June 1991 consisted of estimating water demands in San Joa-

quin and Stanislaus counties and developing surface and groundwater models to be used in evaluating the various alternatives.

## *Water Transfers*

In the past decade several new laws have been passed to help to strengthen California's water policies, grant additional authority to the State Water Resources Control Board, and authorize new activities for the Department. Those laws have been designed to encourage water transfers by the following methods:

1. Voluntary transfer of water and water rights is advocated when consistent with the public welfare in export and import areas.
2. The Department and the State Water Resources Control Board are directed to support voluntary transfers of water and water rights, offering technical assistance, if necessary, to identify and implement water conservation measures that will make additional water available for transfer.
3. Local and regional public agencies are authorized to sell, lease, exchange, or transfer surplus agency water for use outside the agency.
4. State and local agencies are prohibited from denying a bona fide transferee of water the use of unused capacity in a water conveyance facility under specified conditions.

Legislation also required the Department to (1) establish an ongoing program to facilitate the voluntary exchange or transfer of water; (2) implement various state laws pertaining to water transfers; (3) create and maintain a list of entities seeking to enter into transfers and a list of the physical facilities that may be available to carry out water transfers; and (4) prepare a water transfer guide.

### *Water Transfers Committee*

The Department's in-house water transfers committee was established in response to the growing interest in transferring and marketing water. The



committee prepared three documents to facilitate the voluntary exchange or transfer of water within California: *Questions to Be Asked in the Case-by-Case Review of Water Transfer Proposals*; *A Guide to Water Transfers in California* (June 1989); and *A Catalogue of Water Transfer Proposals* (1986).

An updated version of *A Catalogue of Water Transfer Proposals*, which includes information of all water transfer proposals known to the Department as of December 1990, is currently being prepared.

### ***Purchases***

On August 6, 1990, the Yuba County Water Agency (YCWA) signed a contract in which it agreed to sell up to 200,000 acre-feet of water at \$45 per acre-foot to the Department during 1990. According to provisions of the contract, sources of water include 109,000 acre-feet from its New Bullards Bar Reservoir and the remaining from conservation, exchanges, or other local water management programs within Yuba County.

From May 22 through December 31, 1990, YCWA transferred 109,000 acre-feet of water to SWP from New Bullards Bar Reservoir; and, according to the conservation provisions of the contract, 9,909 acre-feet from Browns Valley Water District (BVWD). That water was available to YCWA as a result of an exchange agreement between YCWA and BVWD.

Those transfers allowed the Department to increase its carry-over storage in Lake Oroville by using the purchased water to meet Delta outflow requirements instead of using releases from Lake Oroville.

The Department received a credit of 30,607 acre-feet of water according to Article 6 of the coordinated operations agreement with the U.S. Bureau of Reclamation, effective February 1, 1991. In return, YCWA could be required to release additional water to repay any amount of CVP water used to refill New Bullards Bar Reservoir

### ***Exchange Programs***

In October 1989, the Department entered into a water exchange program with six well owners within the Western Canal Water District service area. The water obtained from the program will be used as increased carry-over storage to meet delivery requests from long-term water supply contractors.

From October 1990 through January 1991, owners pumped 7,752 acre-feet of water from their own wells to meet the district's obligations and reduced their deliveries of surface water from SWP.

The Department paid each well owner \$50 per acre-foot of water plus a portion of the costs to activate the wells. The total cost of the program was \$420,800, including \$23,000 for administration costs paid to Western Canal Water District.

The Department has been monitoring the program since it began and in winter 1991 will publish an evaluation of the potential for and impact of increasing groundwater pumping in the district's area.

### ***Drought Water Bank***

On February 1, 1991, Governor Pete Wilson directed the Department to form the Drought Water Bank. Designed to help Californians cope with the fifth consecutive year of drought, the water bank obtained water from the following three sources:

1. Surplus water in surface reservoirs
2. Additional pumping of groundwater
3. Fallowed agricultural lands

The water obtained by the bank was made available to agencies to use in meeting critical needs for agricultural, municipal, and industrial uses as well as for the benefit of fish and wildlife. In addition, some water was stored in reservoirs as a hedge against the possible continuation of the drought in 1992.

In establishing the water bank, Governor Wilson also established the Drought Action Team to advise

him on matters concerning the bank. The team consisted of 16 members; David Kennedy, Director, Department of Water Resources, was selected by Governor Wilson to serve as chairman of the team and to coordinate the team's activities.

Generally, the water bank paid farmers and agencies \$125 for each acre-foot of water sold. That price was established after discussions with potential buyers and sellers, agricultural economists, and other individuals knowledgeable about water use.

To make bank water available at the Delta Pumping Plant, a portion of the water purchased was required for Delta Outflow; that is, a portion of the water was left in the Delta to meet requirements for salinity control. That loss of water as well as the costs incurred to buy the water, including legal, administrative, and financial costs, resulted in a melded cost to buyers of about \$175. Additional costs of transporting the water from the Delta to buyer's service area was paid by the buyer.

As of June 30, 1991, a total of 350 contracts had been signed, resulting in approximately 800,000 acre-feet of water committed to the bank.

Credits to the water bank of the number of acre-feet purchased were verified through procedures established by the Department and the U.S. Bureau of Reclamation. Basically, procedures required that:

- Acreage fallowed in 1991 was in agricultural production or set aside in 1990.
- Consumptive use of water for specific crops and fallowed acreages, as defined in the seller/grower 1991 crop plan, be deposited in the water bank.
- Any wells used for pumping groundwater must be approved by the Department's and the U.S. Bureau of Reclamation's technical staff before pumping water for the bank.

As of June 30, 1991, a total of 389,770 acre-feet of water had been purchased from the bank. Information about those purchases may be found in Table 22.

The determination of the final amount of water to be purchased for the water bank is a function of a number of factors, including the actual amount of groundwater pumped in several large purchase contracts, and revisions to a number of contracts for fallowing agricultural land.

As of June 30, 1991, final figures had not been developed for Delta carriage water requirements and technical corrections to the amount of water purchased. These factors have been estimated to be on the order of 160,000 acre-feet, leaving a net supply to be allocated of approximately 660,000 acre-feet. As indicated in Table 23, the net allocation to the State Water Project is expected to be about 270,000 acre-feet.

TABLE 22  
**Total Amount of Water Purchased from  
Drought Water Bank, June 30, 1991, by Agency  
(Acre-feet)**

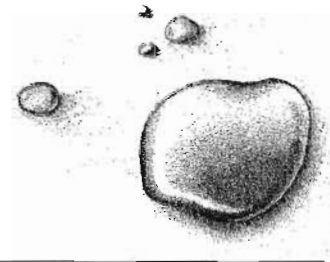
<i>Agency</i>	<i>Acre-Feet Purchased</i>
Alameda County, Zone 7	500
Alameda County Water District	14,800
American Canyon Water District	370
Contra Costa Water District	6,717
Crestline-Lake Arrowhead Water Authority	236
Dudley Ridge Water District	13,805
Kern County Water Agency	53,797
Metropolitan Water District of Southern California	215,000
Oak Flat Water District	975
City of San Francisco	50,000
Santa Clara Valley Water District	19,750
Westlands Water District	13,820
<b>Total</b>	<b>389,770</b>

TABLE 23  
**Drought Water Bank Balances, June 30, 1991**

<i>Component</i>	<i>Water Amounts (Rounded, acre-feet)</i>
Water Purchases	820,000
Delta Carriage Water Requirements, Technical Corrections	- 160,000
Net Supplies	660,000
Allocations to Purchasers	390,000
Net to State Water Project	270,000



# 17. *Assisting Local Water Supply Projects*



**T**HE DEPARTMENT OF WATER RESOURCES participates in two programs designed to provide financial assistance to local agencies for the construction of water supply projects.

Through the first program, public agencies are awarded loans and grants through the Davis-Grunsky Act. Through the second program, the State Water Project (SWP) finances local water supply projects designed to augment SWP's water supply, either directly or indirectly. Information about the two programs follows.

## *Davis-Grunsky Act*

Public agencies have been awarded loans and grants through the Davis-Grunsky Act since 1959. The act, jointly administered by the Department of Water Resources and the California Water Commission, was designed as complementary legislation to the Burns-Porter Act, which was enacted to help finance construction of the State Water Project.

Of the original \$1.75 million made available through the Burns-Porter Act, \$130 million was reserved specifically for distribution under the Davis-Grunsky Act through the California Water Resources Development Fund and the California Water Fund. Loans are repaid to the California Water Resources Development Fund.

## *Basic Provisions*

The broad objective of the Davis-Grunsky Act is to further the development, control, and conservation of water resources in California. To meet that objective, the act is designed to:

- Provide loans to public agencies for preparing feasibility reports and constructing local water projects if those agencies are unable to obtain financing on reasonable terms from other sources.
- Through grants, encourage development of the recreational aspects of local water projects as well as habitats for fish and wildlife.
- Enable California to participate as a partner in the development, construction, or operation of certain water projects when participation is necessary for optimum development of the resource.

Public agencies, including cities, counties, districts, or other political subdivisions of the state, may participate in the program. Types of assistance available include:

- Loans for constructing local water projects, acquiring reservoir sites for proposed water projects, and preparing feasibility reports on proposed projects for which construction loans have been requested

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OR DIRECTLY  
FROM THE  
STATE WATER  
PROJECT.

- Grants for paying part of the construction cost of dams and reservoirs properly allocated to providing for recreation or enhancing fish and wildlife; and constructing initial water supply and sanitary facilities needed for public recreational use of the reservoirs
- State participation as a partner in a project larger than one the local agency proposes to construct on its own

Prior to 1967, loans were made at the current market interest rate. In 1967, to be more equitable to low-income agencies the program was designed to assist, the legislature fixed the interest rate at 2.5 percent.

The maximum loan repayment period is 50 years. However, at the Department's discretion, some agencies were given an initial ten-year deferment; and the accumulated interest was amortized over the repayment period.

Through 1990, approximately \$127 million of the allocated \$130 million has been disbursed or contracted for loans, grants, and administrative costs. The balance of remaining funds has been allocated for a grant to Palmdale Water District and Littlerock Creek Irrigation District to rehabilitate Littlerock Dam.

### *Current Activities*

From July 1, 1990, through June 30, 1991, the following actions involving the Davis-Grunsky Act occurred. Actions are listed alphabetically according to category.

*Determination of Eligibility.* Palmdale Water District and Littlerock Creek Irrigation District, Los Angeles County, were considered eligible for a \$3 million grant to help repair recreational facilities at Littlerock Dam. The districts are preparing the formal application and the required environmental documentation, which they expect to complete by December 1991.

*Extensions.* Home Gardens County Water District, San Bernardino County, received an extension

to March 31, 1991, to complete feasibility studies on constructing a water treatment plant. The treatment plant would not be constructed with Davis-Grunsky funds.

Strathmore Public Utility District, Tulare County, received an extension to June 1, 1991, to meet the final requirements for disbursing funds. Originally, the district received a loan for \$1,860,050 to help construct a \$3 million facility to provide drinking water to the community of Strathmore and adjacent lands.

*Final On-Site Inspection.* The Department conducted the final site inspection and the Office of the State Controller performed the required audit to allow the final payment to Big Bear Municipal Water District, San Bernardino County, for phase one work on repairing Bear Valley Dam.

The Department cannot estimate the starting date for phase two of the project, which involves replacing of the roadway across the dam, until the Department of Transportation constructs a replacement bridge downstream. The maximum amount of funding for phase two is \$380,000.

*Progress Report.* Littlerock Creek Irrigation District, Los Angeles County, completed approximately 40 percent of the work on its \$2 million loan project to upgrade and expand the community's water distribution system.

### *State Water Project Funds*

Local water supply projects designed to augment SWP's water supply may be financed with SWP funds, if available, providing certain administrative guidelines are met. The project must be eligible to be included as part of SWP, and financing by SWP will not exceed the actual construction cost of the local project.

Should construction costs of the local project exceed available SWP funds, local participation in financing the construction will be required. In addition, the local project will not become a unit of

SWP until an agreement has been signed by all participants.

### ***Funding Assumptions***

The three basic assumptions of projects financed by SWP are that:

1. Appropriate water supply contracts would be amended.
2. Yield developed by a local project as a unit of SWP would become part of the yield of SWP, whether for the life of the project or for an interim period.
3. The local project would not adversely affect the costs of water deliveries to nonparticipating SWP contractors.

The Department conducts a feasibility study of local projects when information contained in conceptual and reconnaissance reports (1) support the project; and (2) SWP water contractors agree that the project is advantageous. Projects must be structurally, economically, financially, and contractually feasible as well as environmentally acceptable before they can be added as SWP units.

At this time only one project is being considered by the Department, the enlargement of the Cachuma Reservoir, which is located in Santa Barbara County. Information on that project follows.

### ***Enlargement of Cachuma Reservoir***

In July 1985 the Santa Barbara Flood Control and Water Conservation District requested that the Department conduct a feasibility study for enlarging the Cachuma Reservoir. After five years of reviewing several different proposals, the Department initiated the feasibility study for the Cachuma Reservoir Enlargement Project in February 1987.

Because the U.S. Bureau of Reclamation (USBR), which owns the Cachuma Reservoir and Bradbury Dam, is considering safety modifications to the dam, the feasibility study was conducted as a joint Department-USBR effort.

### ***Study Objectives***

The four objects of the study were to:

1. Determine if the enlargement is a feasible alternative with respect to all engineering, geological, economical, and environmental issues.
2. Estimate the costs of the project.
3. Formulate a plan for financing the enlargement as a feature of SWP.
4. Analyze the financial impacts on SWP contractors.

The study was completed in 1990, and the draft environmental impact report/environmental impact statement (EIR/EIS) was released for public review and comment in December 1990. Information about the review process, which ended in March 1991, follows.

### ***Environmental Review Process***

Two public hearings to receive comments on the draft EIR/EIS were held in Solvang on January 29, 1991, and in Santa Barbara on January 30, 1991. The nine individuals who commented on the document indicated that they would like additional discussions of the impact of the project on ground water quality and downstream users.

The Department received approximately 30 written comments on the draft EIR/EIS. A significant number of respondents expressed negative comments and indicated their concerns about water rights, water quality, water availability, cloud seeding, and growth-inducing impacts at the project.

The completion of the EIR/EIS has been deferred due to the postponement of the State Water Resources Control Board's consolidated hearings on the Santa Ynez River water rights. Concerns about the impact of the existing Bradbury Dam on public trust resources (anadromous fishery) as well as downstream water quality have been raised. Consequently, a program EIR may be required for the entire Santa Ynez River watershed.

In a related development, elections were held in Santa Barbara County in June 1991 to determine whether several county communities wished to participate in the phase-two construction of the Coastal Branch of the California Aqueduct. Most Santa Barbara County communities voted in favor of building phase two, including extensions into Santa Barbara County.

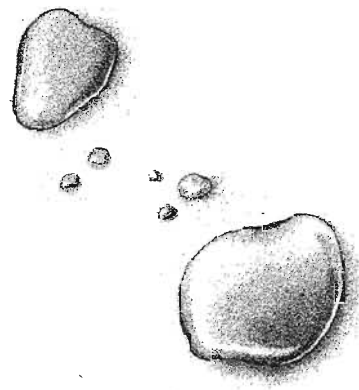
If phase-two construction is completed and Santa Barbara County purveyors take the entire

amount of their entitlement to SWP water through the Coastal Branch, the Department would not participate in the enlargement of Lake Cachuma.

Because of the uncertainties about availability of water rights for an enlarged Lake Cachuma and the potential development of the Coastal Branch for delivery of SWP water to southern Santa Barbara County, USBR has proposed completing the EIS portion of the joint EIR/EIS and proceeding with the dam safety project only.



# 18. Securing Power Resources



**T**O ENSURE THAT THE STATE WATER PROJECT (SWP) has sufficient power to meet its contractual obligations for delivering water, the Department of Water Resources has developed a comprehensive power resources program.

The goals of the Department's program are to:

- Obtain reliable, competitively priced power supplies and transmission services sufficient for operating SWP as an independent, interconnected utility.
- Develop and manage power resources to minimize the cost of water deliveries, while maximizing benefits to SWP and its contractors.
- Minimize the impact on SWP when major contractual power arrangements expire in 2004.

Through its power resources program, the Department uses existing resources for maximum benefit to SWP and economically purchases excess energy from other interconnected utilities throughout the western United States.

To achieve those goals, the Department has constructed its own power facilities and has contracted for long-term power resources from the Los Angeles Department of Water and Power (Castaic); the Southern California Edison Company; the Metropolitan Water District of Southern California; the Kings River Conservation District (Pine Flat); TERA Power Corporation (Bethany Wind Park); and PacifiCorp. In addition, to receive and deliver

the power, the Department has arranged for transmission service between SWP power resources and pumping loads and to interconnected utilities.

Information about SWP's power facilities; transfers, exchanges, and purchases from other utilities; and transmission services follows.

## *Facilities*

Figure 18, "Names and locations of power facilities," on the next page, includes information about SWP's power facilities currently in operation, under construction, or planned. The figure also includes information about facilities that provide contracted power resources to SWP.

Descriptions of SWP's power resources may be found in the following paragraphs.

## *Hydroelectric*

Economical hydroelectric generation provides the largest share of SWP's power resources. The 900 megawatt (MW) Hyatt-Thermalito power plants generate about 2,100 million kilowatt hours (kWh) in a median water year, while the 3 MW Thermalito Diversion Dam Powerplant adds another 24 million kWh a year to SWP's power resources.

Generation at the existing SWP aqueduct recovery plants (Gianelli, Alamo, Devil Canyon, and Warne) varies with the amount of water conveyed.

THROUGH  
ITS POWER  
RESOURCES  
PROGRAM, THE  
DEPARTMENT  
OBTAINS  
MAXIMUM  
BENEFITS FROM  
ITS RESOURCES  
AND  
ECONOMICALLY  
PURCHASES  
EXCESS ENERGY  
FROM OTHER  
INTER-  
CONNECTED  
UTILITIES  
THROUGHOUT  
THE WESTERN  
UNITED STATES.

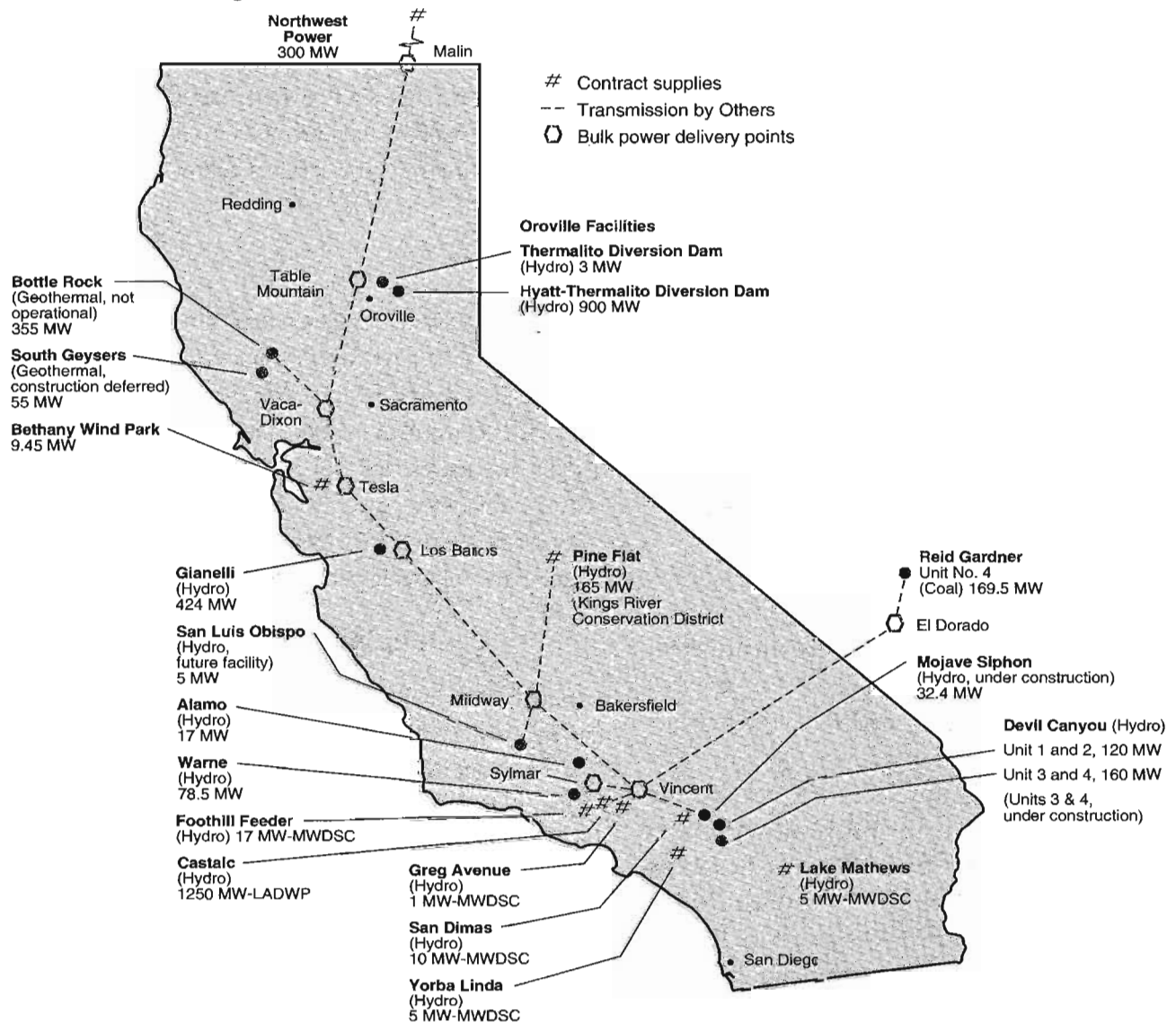
The 437.5 MW combined capacity at those four plants generates about one-sixth of the total energy used for SWP pumping. (Gianelli Pumping-Generating Plant is a joint SWP [222 MW] and Central Valley Project [202 MW] facility.)

The Department also considers and evaluates new power resources to meet SWP's future power requirements. When considering or evaluating new power resources, the Department reviews its on-peak and off-peak power requirements and resources and power costs, including costs for pumping energy.

A resource may be included or deferred based on the following six factors:

1. Capability for meeting anticipated power requirements for pumping
2. Cost of the resource
3. Availability and cost of financing
4. Environmental impacts
5. Operating characteristics
6. Availability of transmission facilities

Projects being considered by the Department include a second unit at Alamo Powerplant; additional capacity at Hyatt-Thermalito; and offstream pumped-storage power facilities associated with the proposed Los Banos Grandes Reservoir.



**Fig. 18. Names and locations of power facilities**

Currently, to increase SWP's hydroelectric recovery capability, one power plant, Devil Canyon, is being enlarged; another plant, Mojave Siphon, is being constructed; and a third plant, San Luis Obispo, is in the planning stage. Information about those projects follows.

### ***Devil Canyon Powerplant***

Devil Canyon Powerplant is being enlarged to accommodate units 3 and 4, which will increase the nameplate rating by 160 MW. Those units are scheduled to be completed in 1992.

An application to amend FERC (Federal Energy Regulatory Commission) License No. 2426 for construction of a second afterbay at Devil Canyon Powerplant was approved on July 23, 1990. The second afterbay is scheduled to be completed in 1994.

### ***Mojave Siphon Powerplant***

Mojave Siphon Powerplant is under construction on the East Branch of the California Aqueduct. This 32.4 MW hydroelectric power plant will be located at the Mojave Siphon upstream from Silverwood Lake. The power plant is scheduled for operation in 1994.

### ***San Luis Obispo Powerplant***

San Luis Obispo Powerplant, a power recovery facility, will be constructed during phase two of the Coastal Branch of the California Aqueduct, which is still in the planning stage.

## ***Coal***

Reid Gardner, a coal-fired generating facility near Las Vegas, Nevada, consists of four units. The Department owns 67.8 percent of Unit Number 4 (169.5 MW) while Nevada Power Company (NPC) owns the remainder of Unit Number 4 as well as all of units 1, 2, and 3.

The Department has received energy from Unit 4 since July 1983. According to the participation agreement for Reid Gardner Unit 4, the Department

receives up to 226 MW from Unit 4 in exchange for NPC's limited right to interrupt the Department's energy deliveries.

Whenever NPC interrupts the Department's portion of generation, the Department receives payment based on NPC's combustion turbine costs.

Beginning in 1998, Nevada Power Company has an annual option to buy up to 6 percent of the Department's ownership share of Unit 4. The utility is required to give the Department a five-year notice to exercise each year's option.

The turbine at Reid Gardner was upgraded in June 1990 to make use of Reid Gardner Unit 4's excess boiler capacity. The upgrade increased the plant's generation capacity by approximately 15 MW. The Department and NPC shared the cost of the upgrade in proportion to their ownership.

The Department will sell its share of Unit 4's upgraded capacity and related energy to NPC through August 31, 1998. Starting September 1, 1998, NPC will sell its share of the Unit 4's upgraded capacity and related energy to the Department on a firm basis.

## ***Geothermal***

The Department participated in the development of two geothermal power plants, Bottle Rock and South Geysers. In addition, the Department leases from the federal government the mineral rights to the Binkley Ranch Club located north of Bottle Rock Powerplant. Information about those two power plants and the lease with the federal government follows.

### ***Bottle Rock Powerplant***

Bottle Rock Powerplant, in Lake County's geysers area, has been owned, operated, and maintained by the Department since February 1985. Geothermal steam for the plant was provided under a contract with MCR Corporation and others until the end of June 1988.

On July 1, 1988, the Department acquired the steam supply for Bottle Rock Powerplant through the purchase of the Francisco steam field leasehold and contracted with Calpine Corporation to operate and maintain the steam field through December 31, 1989.

As of January 1990, the Department contracted with the Northern California Power Agency (NCPA) to operate and maintain the steam field for the next two years. The Department and NCPA also contracted to share the cost of three well work-overs to determine the future viability of the steam field. Those work-overs were completed in early April 1990; however, additional steam was not produced in sufficient amounts.

At this time, drilling for new steam is uneconomical for the Department because lower-cost energy resources are available. Consequently, Bottle Rock Powerplant was taken out of operation in December 1990.

### ***South Geysers Powerplant***

The Department developed plans for another geothermal facility in Sonoma County, South Geysers Powerplant. Three steam wells originally drilled on the property provided the basis for the Department's decision to develop the plant. However, subsequent analyses indicated that available steam resources were not capable of supporting a 55 MW power plant.

In 1985 the Department deferred the completion of South Geysers Powerplant due to the reduced short-term need for additional power resources and the questionable steam supply.

On May 4, 1990, Bechtel Power Corporation purchased the major equipment components of the South Geysers Powerplant (the steam turbine generator, condenser, and associated items) for \$5.5 million. The Department is exploring the possibility of leasing the steam field and power plant site to other parties for alternative uses.

### ***Mineral Rights***

The Department leases from the federal government the mineral rights to the Binkley Ranch Club located north of the Francisco leasehold and Bottle Rock Powerplant.

The Department has obtained the necessary permits to construct a well pad on the leasehold. The Binkley lease is considered a supplemental source of steam for Bottle Rock if the economics improve.

In September 1989 the California Energy Commission began hearings on the unexpected steam decline throughout the geysers area. The decline has affected nearly all the power plants in the region.

The Energy Commission established a committee to investigate the decline, and the Department has been an active participant. Consultants have been hired by the California Energy Commission to study the Geysers Geothermal Reservoir and to recommend measures to improve steam utilization of the field.

### ***Transfers, Exchanges, and Purchases***

The Department obtains a significant amount of capacity and energy for SWP operations through transfers, exchanges, and purchase agreements with other utilities throughout California, the Northwest, and Southwest. In addition, negotiations continue with various utilities in the Pacific Northwest to develop long-term arrangements for purchases, sales, and exchanges to take full advantage of the Department's 300 MW of transmission capacity on the Pacific Northwest Intertie. See Table 24, "Power Contracts, by Title and Date Signed," at the end of this chapter.

To reduce SWP's costs, the Department will continue to use the 300 MW of transmission capacity to the maximum extent possible and will also continue to negotiate with utilities in California and the Southwest for purchases and sales of power to

maximize benefits to SWP. (See “Transmission Services” in this chapter for additional information.)

Information about transfers, exchanges, and purchase agreements with other utilities follows.

### *Transfers*

In 1966 the Department entered into a contract with the Los Angeles Department of Water and Power (LADWP) to jointly develop Castaic Powerplant. According to the contract, LADWP constructed and operates Castaic Powerplant and the Department receives capacity and energy from LADWP.

The Department receives the capacity and energy at the Sylmar Substation, based on weekly water schedules through the West Branch.

### *Exchanges*

A significant amount of energy used by SWP is provided according to exchange agreements arranged with various utilities. Information about those agreements follows.

#### *Southern California Edison*

The major portion of the energy used by SWP is provided according to a 1979 power contract and the 1981 capacity exchange agreement (CEA) with Southern California Edison (SCE). Services began in April 1983 according to terms of the power contract and April 1987, according to terms of the capacity exchange agreement.

According to terms of the 1979 power contract, the Department provides the following to SCE:

- Up to 350 MW of capacity and approximately 40 percent of the energy from the Hyatt and Thermalito power plants
- Up to 120 MW of capacity and all the energy generated by the Devil Canyon Powerplant (units 1 and 2)
- Up to 15 MW of capacity and all the energy generated by Alamo Powerplant

In return, the Department receives off-peak energy from SCE equal to the total amount of

energy SCE receives from Hyatt-Thermalito, Devil Canyon, and Alamo power plants plus an additional amount of energy as payment for the capacity

The amount of additional energy is determined annually based on the capacity-energy exchange formula defined in the 1979 power contract. The formula is used to determine the value of capacity in dollars and convert the dollar value to an equivalent amount of off-peak energy.

According to terms of the 1981 capacity exchange agreement, each year the Department delivers 412.5 million kWh of energy to the SCE during on-peak periods at a maximum delivery rate of 225 MW. Southern California Edison returns, during the partial-peak and off-peak periods, approximately 110 percent of the energy provided by the Department.

In addition, SCE waives 75 percent of its charges to the Department for firm transmission service provided to SWP pumping and generating facilities and makes an annual payment of \$900,000 to the Department.

The savings to the Department for SCE waiving 75 percent of its firm transmission charges was approximately \$7,400,000 in 1990.

#### *Metropolitan Water District of Southern California*

The Department also contracts for the energy output of five hydro plants owned by the Metropolitan Water District of Southern California (MWDSC). The combined total capacity of those plants is 30 MW.

According to the terms of the 1979 contract, SCE receives energy from Lake Mathews, Foothill Feeder, San Dimas, and Yorba Linda power plants. In return, the Department receives off-peak energy from SCE averaging approximately 107 percent of the total energy that is provided to SCE from those four plants.

According to a 1983 agreement with the Los Angeles Department of Water and Power, all the

energy from the fifth plant (Greg Avenue) is provided to LADWP. The utility returns 98.8 percent of this energy to the Department during off-peak periods.

### ***Other Pacific-based Utilities***

Through interchange agreements, the Department exchanges economy energy with utilities in California, the Pacific Northwest, and Southwest.

According to those agreements, the Department can sell or buy or both economy energy on an hourly or daily basis. Some agreements also provide for the Department to sell and/or buy short-term firm capacity and/or firm energy on hourly, daily, weekly, or monthly basis.

Those agreements permit more efficient use of the Department's generating resources and more efficient scheduling of energy deliveries. The length of those interchange agreements is generally between 20 and 30 years.

## ***Purchases***

The Department obtains a significant amount of energy through long-term and short-term purchase agreements with utilities in California and the Northwest. Information on those agreements follows.

### ***Long-Term Purchases***

The Department purchases energy from hydro generation developed by others. The output of the 165 MW Pine Flat Powerplant, owned and operated by the Kings River Conservation District, provides SWP about 400 million kWh of energy in a median water year.

The Department also purchases wind-generated energy from TERA Power Corporation. The energy is delivered from the Bethany Wind Park to the South Bay Pumping Plant near Tracy. Originally, TERA had installed 168 wind machines with a capacity of 9.45 MW. However, because of mechanical failures and subsequent litigation involving the developer, investors, and manufac-

turers, many machines are out of service. Today, approximately 50 units generate about 2.7 MW.

In addition, the Department recently signed an agreement with PacifiCorp of Portland, Oregon, for the purchase of 100 MW of firm capacity and associated energy. That agreement, effective June 1, 1991, will continue through 2004.

### ***Short-Term Purchases***

In addition to the power resources described in previous paragraphs, the Department has contracts with Pacific Gas and Electric Company (PG&E), SCE, and Bonneville Power Administration for the purchase of power when needed. Additionally, according to terms of the coordination agreement between the Department and MWDSC, the Department may purchase surplus energy from MWDSC's Colorado River Aqueduct power resources.

The coordination agreement provides for coordinated operation between SWP and MWDSC's Colorado River Aqueduct system. It also provides for (1) sales of surplus firm energy to MWDSC on a monthly basis; (2) sales of economy energy to MWDSC; (3) purchases of surplus energy from MWDSC's Colorado River Aqueduct system; and (4) exchanges of energy between the Department and MWDSC.

The Department also has 25 other agreements for purchasing interruptible economy energy to satisfy unexpected, short-term energy shortages. Table 24 includes information about contracts for economy energy sales, purchases, transmission services, and major long-term power agreements.

## ***Transmission Services***

The Department must arrange for adequate transmission service between SWP power resources and pumping loads and to interconnected utilities for purchases, sales, and exchanges of power. Most SWP transmission needs are currently met by contractual arrangements with California utilities (see Table 24).

However, the Department's long-term objectives include acquiring its own transmission facilities between resources and loads where feasible and providing additional interconnections to other potential power sources. To improve and expand its transmission services, the Department is pursuing the development of various alternatives, including acquiring:

- Additional transmission capability from the California-Oregon border to Tracy
- Alternative transmission paths between the Department's resources and loads to achieve a greater degree of operating flexibility
- Additional transmission paths to the Southwest

Currently, to improve transmission services, the Department is planning to construct and operate a new transmission line between Banks Pumping Plant and South Bay Pumping Plant. Based on the 1991 cost estimates, the transmission line would pay for itself in about 14 years. The environmental and engineering studies have been completed, and the Department is negotiating the transfer of this service with PG&E. The final design has begun with completion scheduled in 1994.

In addition, the Department has been working with various public and private utilities in California to add reinforcements and purchase transmission capacity. Information about those activities may be found in the following paragraphs.

### *Reinforcements*

As part of a comprehensive agreement with PG&E, the Department requested that the utility add reinforcements between Los Banos and Midway substations. Those reinforcements would reduce the curtailment of service for nearly 1,100 MW of firm transmission service for the Department.

Pacific Gas and Electric Company indicated that reinforcements could be delayed and possibly avoided if the Department would be willing to drop portions of SWP pump load and generation during PG&E transmission system emergencies. The Department and PG&E developed a remedial action plan to ensure that dropping portions of pump load and generation will not adversely affect SWP. The utility is currently seeking approval of this agreement from FERC.

### *Transmission Capacity*

In August 1967 the Department contracted for 300 MW of transmission capacity through 2004 on the extra-high voltage (EHV) Pacific Northwest Intertie from the California-Oregon border to the Table Mountain, Tesla, Los Banos, and Midway substations. The Department is retaining the entire 300 MW share of that EHV transmission capacity for access to the Northwest where low-cost power is currently available and projected to be available in the future.

In December 1984 the Department signed a memorandum of understanding (MOU) with many public and private California utilities. As part of that agreement, the Department has a five-year option beginning in January 2005 to purchase 97 MW of transmission capacity on the proposed third 500-kV (kilovolt) transmission line connecting California with the Pacific Northwest.

Construction of the line began in October 1990, with a scheduled operation date of December 1992. The parties to the MOU continue to negotiate a project participation agreement.



TABLE 24  
Power Contracts, by Title and Date Signed

<i>Contract Title (Short Form) and Date Signed</i>	<i>Name of Contractor</i>	<i>Purpose</i>	<i>Effective Through</i>
1. West Branch Cooperative Development (9/2/66)	Los Angeles Department of Water and Power	Joint development of Castaic Power Project on California Aqueduct, West Branch	12/31/2014
2. Extra High Voltage (EHV) Intertie (8/1/67)	Pacific Gas and Electric Co., Southern California Edison Co., San Diego Gas and Electric Company	300 MW of EHV transmission from Oregon border to specific points in California by SWP and purchase of off-peak energy to extent of purchased transmission capacity	12/31/2004
3. Bonneville Power Administration (9/5/87)	Bonneville Power Administration (BPA)	Purchase of surplus BPA energy at Oregon-California border	12/4/2017
4. Fourth Supplemental Resolution, Oroville (9/28/77)	Department of Water Resources (DWR) Resolution	Replacement of Power Sale Contract; effective 4/1/83	Repayment of last bonds or 11/29/2017, whichever late
5. MWD Hydro (1/9/78)	Metropolitan Water District of Southern California	Effective 4/1/83; provides for purchase of output from five small hydro developments totaling 29.5 MW of capacity	At least to 3/31/2008
6. San Diego Gas and Electric EHV Settlement (5/25/78)	San Diego Gas and Electric Company (SDG&E)	Establishes extent of SDG&E's obligation to supply off-peak energy during the remaining term of the EHV contract and resolves disputes concerning DWR's use of its EHV transmission entitlement	12/31/2004
7. Reid Gardner Unit 4 Participation (7/11/79)	Nevada Power Company	Joint ownership of an additional unit at an existing coal-fired plant near Las Vegas	7/25/2013
8. Power Contract (10/11/79)	Southern California Edison Company (SCE)	Commencing 4/1/83, provides: a. Transmission service in SCE's service area b. Rights to purchase up to 300 MW firm capacity and/or spinning reserves c. Rights to purchase off-peak energy d. Exchanges of off-peak energy for 485 MW of DWR's on-peak capacity	12/31/2004
9. Firm Transmission Service Agreement (10/11/79)	Southern California Edison Company	Transmission service between El Dorado and Vincent substations for Reid Gardner	7/25/2013
10. Edison-DWR 1979 (10/11/79)	Southern California Edison Company	Establishes rate of SCE's off-peak energy under the EHV contract effective 1/1/83	12/31/2004
11. Pine Flat (11/6/79)	Kings River Conservation District	Purchase of hydroelectric output from Pine Flat Power Plant	3/31/2034
12. Emergency Service Agreement (7/21/80)	Southern California Edison Company	Emergency service between the parties	12/31/2004
13. Capacity Exchange Agreement (9/17/81)	Southern California Edison Company	Effective 4/2/87, exchanges 225 MW of on-peak capacity from Hyatt-Thermalito for: a. Up to 600 MW of SCE's capacity during off-peak periods b. Up to 225 MW of SCE's capacity during partial-peak periods c. A 75 percent reduction in transmission service charges for transmission under Power Contract and Firm Transmission Service Agreement d. An annual payment of \$900,000 to DWR	12/31/2004
14. Agreement for Sale of Interruptible Energy (10/1/89)	British Columbia (B. C.) Power Export Corporation (Powerex)	Sale of B.C. Hydro surplus interruptible energy to DWR	12/31/2010 or upon one month notice by either party
15. Agreement for Sale of Nonfirm Thermal Energy (3/8/82)	Pacific Power and Light Company	Sale of nonfirm thermal energy to DWR	12/31/91 or upon one month notice by either party
16. Comprehensive Agreement (4/22/82)	Pacific Gas and Electric Company (PG&E)	Up to 1,465 MW of firm energy transmission service in PG&E's service areas effective 4/1/83	12/31/2004 with option for 10-year extension
17. Generation Replacement Agreement (6/14/82)	Southern California Edison Company	Provides energy from DWR resources to replace lost generation of two SCE plants on San Bernardino Valley Municipal Water District system	5/31/2012
18. Energy Purchase Agreement (6/14/82)	San Bernardino Valley Municipal Water District (SBVMWD)	District to pay DWR for energy supplied to SCE under the Generation Replacement Agreement and give DWR option to develop four small hydro plants on SBVMWD's system	5/31/2012
19. Power Sale Agreement (5/14/82)	TERA Power Corporation	Sale of energy to DWR from wind-powered generation facilities constructed by TERA	5/2/2002
20. Southern California Edison EHV Settlement Agreement/Pacific Gas and Electric EHV Settlement Agreement (12/31/82)	Southern California Edison Company/Pacific Gas and Electric Company	Establishes extent of DWR's ability to exercise its rights to 300 MW of EHV transmission from Pacific Northwest. PG&E agreement also defines rate for EHV off-peak energy purchases	12/31/2004 and 1/1/2005, respectively
21. Interchange Agreement (6/29/83)	San Diego Gas and Electric Company (SDG&E)	Energy exchanges between SDG&E and DWR	7/31/2010
22. Greg Avenue Power Plant Energy Exchange Agreement (8/29/83)	Los Angeles Department of Water and Power	Exchange of DWR's entitlement to Greg Avenue Power Plant energy for credit and off-peak energy	Until terminated by either party upon two-year advance written notice
23. Economy Energy Agreement (9/22/83)	Los Angeles Department of Water and Power	Bilateral sale of economy energy	Until terminated by either party
24. Coordination Agreement between SCE and DWR (10/8/83)	Southern California Edison Company	Nonfirm energy sales to SCE, short-term exchanges, allows SCE to bank energy at San Luis Reservoir; allows for seasonal capacity and energy exchange	12/31/2005



TABLE 24  
Power Contracts, by Title and Date Signed (Continued)

<i>Contract Title (Short Form) and Date Signed</i>	<i>Name of Contractor</i>	<i>Purpose</i>	<i>Effective Through</i>
25. Energy Interchange Agreement (6/6/84)	Tucson Electric Power Company	Bilateral sale of economy energy	12/31/2008
26. Energy Interchange Agreement (7/27/84)	City of Pasadena	Bilateral sale of economy energy	12/31/2011
27. Energy Interchange Agreement (7/27/84)	City of Riverside	Bilateral sale of economy energy	12/31/2013
28. Energy Interchange Agreement (7/27/84)	City of Glendale	Bilateral sale of economy energy	12/31/2012
29. Energy Interchange Agreement (7/31/84)	City of Burbank	Bilateral sale of economy energy	12/31/2013
30. Interconnection Agreement (7/31/84)	Nevada Power Company	Bilateral sale of economy energy	12/31/2006
31. Energy Interchange Agreement (9/17/84)	City of Anaheim	Bilateral sale of economy energy	12/31/2013
32. Service Agreement (11/1/84)	Montana Power Company	Sale of nonfirm energy to DWR	Until terminated by either party
33. Economy Energy Agreement (11/6/84)	Salt River Project	Bilateral sale of economy energy	12/31/2013
34. Energy Interchange Agreement (12/1/84)	Northern California Power Agency (NCPA)	Bilateral sale of economy energy	12/31/2009
35. Edison-DWR Interruptible Transmission Service Agreement (12/19/84)	Southern California Edison Company	Interruptible transmission service between Palo Verde Generating Station and Vincent Substation, between Eldorado and Mead substations, and so forth	12/31/2004
36. Service Agreement (1/7/85)	Idaho Power Company	Sale of nonfirm energy to DWR	Until terminated by either party
37. Energy Interchange Agreement (4/18/85)	El Paso Electric Company	Bilateral sale of economy energy	12/31/2010
38. Interconnection Agreement (4/18/85)	Portland General Electric Company	Bilateral sale of economy energy	12/31/2010
39. Interconnection Agreement (4/30/85)	Pacific Power and Light Company	Bilateral sale of economy energy	12/31/2009
40. Energy Interchange Agreement (4/30/85)	Seattle City Light	Bilateral sale of economy energy	12/31/2015
41. Power and Energy Interchange Agreement (6/3/85)	Arizona Public Service Company	Bilateral sale of economy energy	12/31/2010
42. Energy Interchange Agreement (8/20/85)	City of Santa Clara	Bilateral sale of economy energy	12/31/2008
43. Service Agreement (8/13/85)	Washington Water Power Company	Sale of nonfirm energy to DWR	Until terminated by either party
44. Service Agreement (9/1/85)	Western Area Power Administration (Sacramento Area Office)	Sale of nonfirm energy to WAPA	12/31/2004
45. DWR-MWD Coordination Agreement (2/26/88)	Metropolitan Water District of Southern California (MWDSC)	Bilateral energy transactions and exchanges; SWP and MWDSC's CRA operations coordination	9/30/2017
46. Energy Interchange Agreement (4/7/88)	City of Vernon	Bilateral sale of economy energy	12/31/2013
47. Energy Interchange Agreement (4/12/88)	Eugene Water and Electric Board	Bilateral sale of economy energy	12/31/2013
48. Capacity/Energy Interchange (9/13/88)	Modesto Irrigation District (MID)	Sale of capacity and associated energy to MID as available; bilateral sale of economy energy	12/31/92
49. Power Sale Agreement (1/17/89)	Turlock Irrigation District	1991-1992 sale of firm capacity and associated energy; varying monthly amounts of capacity (8 MW to 44 MW)	12/31/92
50. Agreement of Cotenancy in the Castle Rock Junction-Lakeville 230-kV Transmission Line (5/10/89)	PG&E, NCPA, and city of Santa Clara	Transmission ownership of the Castle Rock Junction-Lakeville 230-kV transmission line	12/31/2014
51. Castle Rock Junction-Lakeville Transmission Service Agreement (5/10/89)	NCPA and city of Santa Clara	Providing transmission service to NCPA and city of Santa Clara	12/31/2014
52. Power Sale Agreement (3/2/90)	City of Vernon	Sales of firm capacity and associated energy, 1991-1993	12/31/93
53. Power Sale Agreement (3/31/90)	Modesto Irrigation District	Sales of firm capacity and associated energy, 1991-1992	12/31/93
54. Interchange Agreement (8/15/89)	Turlock Irrigation District	Bilateral sale of economy energy	12/31/2013
55. Power Sale Agreement (12/13/90)	Turlock Irrigation District	1993-94 sale of firm capacity and associated energy	12/31/94
56. Capacity/Energy Interchange (11/13/90)	Sacramento Municipal Utility District	Bilateral sale of capacity and associated energy, and economy energy	12/31/2015
57. Power Purchase Agreement (4/28/91)	Pacific Power and Light Company	System purchase of firm capacity and associated energy (100 MW)	12/31/2004



# 19. Forecasting Power Requirements, Resources, Costs, and Sales



**E**NSURING THAT THE STATE WATER PROJECT (SWP) has an adequate supply of electric power involves:

1. Forecasting power requirements
2. Obtaining power resources by constructing facilities and by transferring, exchanging, and purchasing power
3. Arranging for power transmission services

The Department's forecast of electric power requirements is based primarily on SWP's operational capability to deliver short-term and long-term water delivery requests from SWP's water contractors. From the requests the Department develops short-term and long-term operational studies on which SWP's electrical capacity and energy forecasts are based.

Each year after reviewing the water contractors' water delivery requests and the construction schedule for future facilities, the Department determines SWP's power requirements through 2035. Short-term SWP operational studies, based on the actual water supply and reservoir storage levels, are conducted for the current year and the two ensuing years of operation.

Long-term operational studies, based on median-year water supply conditions and optimum reservoir storage levels, are performed for the remaining years.

The State Water Project's annual electrical capacity and energy requirements may vary signif-

icantly from the amounts forecast, depending on the amount of water available and delivered in a given year. For example, dry conditions in northern California could result in a reduction of the amount of water available for delivery to SWP's water contractors. If full deliveries cannot be made, less power will be used than originally forecast.

Power requirements could also decrease during a wet year if, because of local water conditions in the San Joaquin Valley or southern California, the need for SWP's water deliveries is reduced. Conversely, power requirements would exceed the amount originally forecast if actual water deliveries were greater than the amounts estimated; for example, if deliveries of deferred entitlement water were made or if additional pumping was needed to refill reservoirs south of the Delta after a dry year.

## *Requirements and Resources*

The forecast for power requirements in 1991 was based on water supply projections made by the Department early in the year. When making the forecast, the Department assumed that 1991 water supplies would be sufficient to meet entitlement deliveries of 1,114,081 acre-feet. That amount of water represents deferred approval of 100 percent of agricultural entitlement requests and 50 percent of municipal and industrial entitlement requests.

THE  
DEPARTMENT'S  
FORECAST  
OF ELECTRIC  
POWER  
REQUIREMENTS  
IS BASED  
PRIMARILY  
ON SWP'S  
OPERATIONAL  
CAPABILITY  
TO DELIVER  
SHORT-TERM  
AND  
LONG-TERM  
WATER  
DELIVERY  
REQUESTS  
FROM WATER  
CONTRACTORS.

For 1992 through 2035, the power requirement forecast was based on hydrology sufficient to meet the water contractors' full entitlement delivery requests.

Table 25, "Total Amounts of Energy Requirements for Years 1991, 1995, 2000, and 2005," at the end of this chapter includes information about SWP's energy requirements and corresponding transmission energy losses for the years indicated. Table 25 also includes a forecast of energy to be delivered to the Southern California Edison Company as well as firm sales to other utilities (see "Sales" in this chapter).

In addition to forecasting energy requirements, the Department also considers electrical capacity requirements, the rate of delivery or demand for energy during a given period. The State Water Project is operated so as to minimize pumping requirements during hours when capacity and energy costs are highest. Thus, SWP's highest capacity and energy requirements occur during nights, weekends, and holidays (off-peak periods) when capacity and energy costs are lowest.

The Department uses a variety of power resources to meet SWP's estimated energy requirements, including power it generates at its own facilities as well as resources it purchases through contracts or on the open market.

The amounts of on-peak and off-peak energy the Department expects from each resource during the years 1991 through 2004 are graphically illustrated in Figure 19, "Estimated energy requirements and resources for years 1991 through 2004," which may be found at the end of this chapter.

Table 26, "Estimates of Total Amounts of On-Peak and Off-Peak Energy Produced in Year 2000, by Type of Resource," at the end of this chapter, includes an itemized list of the amount of energy each resource is expected to produce during the year 2000.

As indicated in Figure 19, the Department uses a different combination of resources to meet its on-peak and off-peak energy requirements. Because the Department has the flexibility to regulate

SWP's pumping requirements on an hourly basis, maximum SWP pumping is scheduled during the off-peak hours (10 p.m. to 8 a.m., Monday through Saturday and all day on Sunday and holidays).

By scheduling as much off-peak pumping as possible, the Department is able to take advantage of neighboring utilities' inexpensive surplus generation capability. Conversely, the Department maximizes hydroelectric generation during the on-peak hours as indicated by the Hyatt-Thermalito and recovery generation components included in Figure 19.

With the exception of the nonfirm purchases and a portion of the firm power purchases (post-1994), the Department either owns or has contracted for the majority of its long-term power resources.

The Department's forecast of the peak demand (the highest on-peak and off-peak capacity requirements) for years 1992 and 2000 is included in Table 27, "Total Amounts of On-Peak and Off-Peak Electrical Capacity Requirements Projected for Years 1992 and 2000," at the end of this chapter.

The total capacity requirement consists of capacity needed for pumping and reserve requirements, transmission losses, contractual obligations to Southern California Edison Company, and firm sales.

### *On-Peak*

As also indicated in Figure 19, SWP's annual on-peak energy requirement (the sum of on-peak components) is forecasted to increase from 4,470 million kWh (kilowatt-hours) in 1992 to about 6,700 million kWh in 2004.

The sharpest increase will occur during the 1992-to-1997 time frame when energy consumption is forecast to be 6,626 million kWh, an increase of almost 2,200 million kWh. As the escalation in water deliveries begins to level off in 1997, the annual on-peak energy requirement also levels off.

As indicated in Figure 20, “Estimates of sources to meet on-peak and off-peak energy requirements for years 1992 and 2000,” which may be found at the end of this chapter, hydroelectric generation is the dominant resource during the on-peak period for 1992. Hyatt-Thermalito and recovery generation provide 31 percent and 23 percent of the forecasted energy during this period. Through the year 2004, hydroelectric generation remains fairly constant.

Increases in on-peak energy consumption are met with firm and nonfirm purchases. Firm system purchases (energy guaranteed by the seller except in emergency situations) will supply an equal amount of energy to both the on-peak and off-peak periods.

### *Off-Peak*

During off-peak periods, the annual energy requirement remains fairly constant at about 7,580 million kWh with the exception of years 1992 and 1993, periods in which the short-term planning model is used. That constant level of energy consumption (7,580 million kWh) indicates that SWP is operating at full capacity during the off-peak period.

Diversity power exchanges with Southern California Edison (SCE) provide a large portion of the off-peak resources. In 1992 those exchanges will provide about 3,500 million kWh or 42 percent of the total off-peak energy used by SWP; the amount will decrease to 2,900 million kWh in 2004. Coal-fired generation and recovery generation along with power purchases will provide the remaining off-peak resources.

### *Costs*

Currently, SWP is able to meet its power needs at a relatively economical cost through a combination of its own power resources and through energy obtained through contracts (see Table 24 in Chap-

ter 18). However, to ensure that SWP’s needs will continue to be met at a relatively economical cost, the Department annually compiles a listing of the amount of energy forecasted to be generated by its own resources, the amount to be purchased, and the cost (in mills per kilowatt-hour) of producing or purchasing that energy.

The current projections made by the Department for years 1991, 1995, 2000, and 2005 are included in Table 28, “Estimated Amounts of Energy Resources and Unit Costs for Years 1991, 1995, 2000, and 2005.”

The table, which may be found at the end of this chapter, is organized into two sections; the first section includes the amount of energy (in millions of kilowatt-hours) the Department expects to obtain from each source. The net energy gained by SWP according to the 1979 power contract and the 1981 capacity exchange agreement are included as energy resources. (See Chapter 18, “Securing Power Resources” for additional information about the power contract and capacity exchange agreement.) The second section includes information about the unit costs (in mills per kilowatt-hour) of the resources.

When making the forecast, the Department assumes that future energy requirements in excess of available resources will be met through unspecified purchases of firm and nonfirm energy.

### *Costs of Pumping*

The State Water Project’s energy requirements for pumping include energy used for pumping as well as the associated transmission losses for delivery of entitlement water, recreation water, reservoir and aqueduct losses, and replenishment of reservoir storage south of the Delta. Firm and surplus energy includes the expected SWP energy surpluses available for sale.

The first section of Table 28 includes information about energy resources necessary to meet those requirements.

### *Average Unit Costs*

The current projections (in mills per kilowatt-hour) of the average unit costs of energy from the various resources may be found in the second section of Table 28. Those projections include allowances for future escalation of operation and maintenance costs (generally 6.3 percent per year) and appropriate allowances for escalation of fuel costs.

Most of the differences between the costs of resources listed in this table and in Table 18 of Bulletin 132-90, *Management of the State Water Project*, which was published by the Department of Water Resources in March 1991, are due to updated estimates for construction, financing, fuel, and operations and maintenance costs.

### *Composite Resource Costs*

The composite resource costs listed in Table 28 represent the weighted average unit cost of all SWP energy from the sources listed.

The unit values of potential sales of surplus energy were estimated by escalating the projected 1991 value of 26.9 mills per kWh for on-peak energy sales and 22 mills per kWh for off-peak energy sales at rates published in the Wharton Econometric Forecasting Associates' long-term forecast of the third quarter 1990 (Table 8.1, "Composite Refiners Acquisition Cost of Oil").

### *Net Costs*

The State Water Project's net cost of energy is the unit cost of the energy actually used for SWP's purposes. The amount of unit transmission costs included in Table 28 were calculated by dividing the amount of total annual SWP expenditures for power transmission services by the amount of the annual SWP energy requirements. That calculation reflects the 75 percent of the firm transmission service costs waived by SCE according to the provisions of the capacity exchange agreement.

The amounts of effective unit costs included in Table 28 represent the average costs for energy

used to operate the project, exclusive of any surplus or unscheduled water service. However, because of allocation adjustments for costs of off-aqueduct power facilities and credits for generation at SWP recovery plants, the amounts of unit costs included in Table 28 do not represent actual energy costs reflected in the annual statements of charges distributed to contractors.

### *Sales*

When producing power, SWP may have, at any one time, surplus power; that is, power in excess of its needs. Consequently, the Department has entered into agreements with many utilities for selling surplus power, which most often develops as a result of reduced water delivery demands or an abundance of SWP-generated hydro power. The surpluses are generally marketed for periods ranging from a day to a year.

Payment to the Department for the sales can be in cash or, in some instances, return energy during periods when SWP needs power. For example, in 1990 the Department sold or exchanged energy with the cities of Anaheim, Azusa, Banning, Colton, Riverside, and Vernon and the following utilities:

- Los Angeles Department of Water and Power
- Metropolitan Water District of Southern California
- Modesto Irrigation District
- Nevada Power Company
- Northern California Power Agency
- Pacific Gas and Electric Company
- Portland General Electric Salt River Project
- Puget Sound Power and Light
- Sacramento Municipal Utility District
- San Diego Gas and Electric Company
- Southern California Edison Company
- Turlock Irrigation District

The Department also has contracts to sell surplus power to Turlock Irrigation District through 1994;

Modesto Irrigation District through 1992; the city of Vernon through 1993; and the cities of Azusa and Colton through April 1991.

According to the terms of those contracts, the Department will provide the utilities with firm power. The amounts will vary monthly and will be lower during the winter months than during the summer months, with maximum power to be provided in July.

Significant revenues for SWP may be generated through those contracts. In 1991, during the month of July, the Department will provide the utilities with 168 MW of capacity and up to 89 million kWh of energy.

In addition to selling firm power, the Department may sell power on a day-to-day or hour-to-hour basis according to terms of the Western System Power Pool (WSPP) Agreement, which the Department signed in November 1986, along with 15 other utilities in the western states.

The agreement provided for a two-year experiment to test market-based pricing for the following

services: economy energy, unit commitment, short-term capacity/energy sales or exchanges, and transmission services. The Department began receiving daily quotations for services in May 1987. Participants were permitted to enter into mutually beneficial transactions for any of these services during the term of the agreement.

Although participants filed with the Federal Energy Regulatory Commission (FERC) to extend the term of the experiment until 1992, approval was given for only one year and participants were told to either seek permanent status thereafter or disband.

On April 23, 1991, FERC disapproved a permanent ten-year agreement proposed by WSPP. The commission ordered several changes and stated it would no longer allow the market-based pricing method. Instead, the commission ordered a cost-based pricing method along with other revisions. On August 19, 1991, WSPP filed a conformed agreement with FERC and is now awaiting acceptance by FERC.

TABLE 25  
**Total Amounts of Energy Requirements for Years 1991, 1995, 2000, and 2005**  
(Millions of kilowatt-hours)

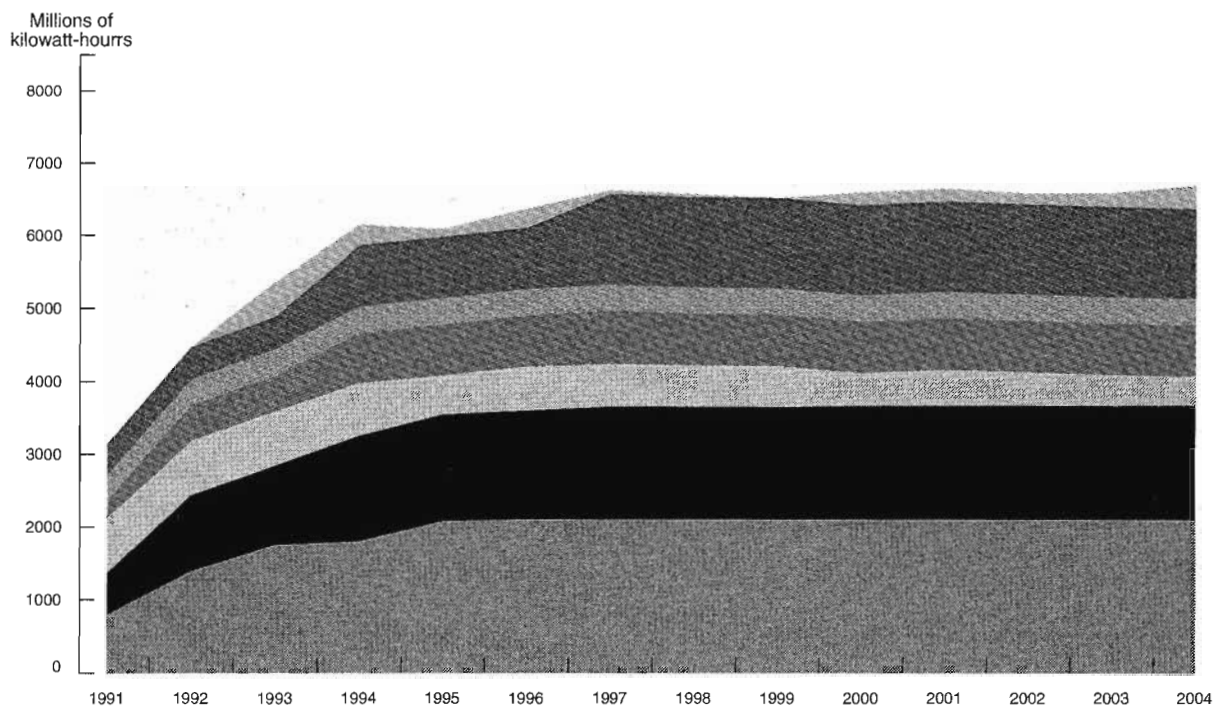
<i>Pumping Plants</i>	<i>Calendar Year Requirements</i>			
	<i>1991</i>	<i>1995</i>	<i>2000</i>	<i>2005</i>
<b>North Bay Aqueduct Plants</b>				
Barker Slough	6	8	10	11
Cordelia	7	13	14	16
<b>South Bay Aqueduct Plants</b>				
South Bay	101	160	163	163
Del Valle	1	1	2	2
<b>California Aqueduct Plants</b>				
Banks	486	1,191	1,247	1,258
Gianelli	173	200	266	270
Dos Amigos	158	520	543	547
Buena Vista	261	598	610	626
Wheeler Ridge	316	677	705	714
Chrisman	682	1,433	1,497	1,517
Edmonston	2,423	5,077	5,295	5,365
<b>East Branch Plants</b>				
Pearblossom	381	760	802	807
<b>West Branch Plants</b>				
Oso	138	294	297	298
<b>Coastal Branch Plants</b>				
Las Perillas	1	10	16	16
Badger Hill	1	25	41	41
Devil's Den	0	0	48	48
Bluestone	0	0	48	48
Polonio Pass	0	0	48	48
<b>Subtotal (a)</b>	<b>5,135</b>	<b>10,967</b>	<b>11,661</b>	<b>11,795</b>
Transmission Losses (b)	305	569	604	610
<b>Total Pumping Energy Requirements</b>	<b>5,440</b>	<b>11,536</b>	<b>12,265</b>	<b>12,405</b>
Energy Obligations to Southern California Edison (c)	1,290	2,124	2,172	2,175
Firm Contracts Sales	570	0	0	0
<b>Grand Total, Energy Requirements</b>	<b>7,300</b>	<b>13,660</b>	<b>14,437</b>	<b>14,580</b>

a) Energy requirements based on energy used to deliver recreation water and SWP contractors' requested entitlement water as well as to account for reservoir and aqueduct losses and replacement of reservoir storage south of the Delta. For year 1991, requirements are based on delivering 50 percent of municipal and industrial and 0 percent of agricultural requests. Requirements for all other years are based on delivering full entitlements.

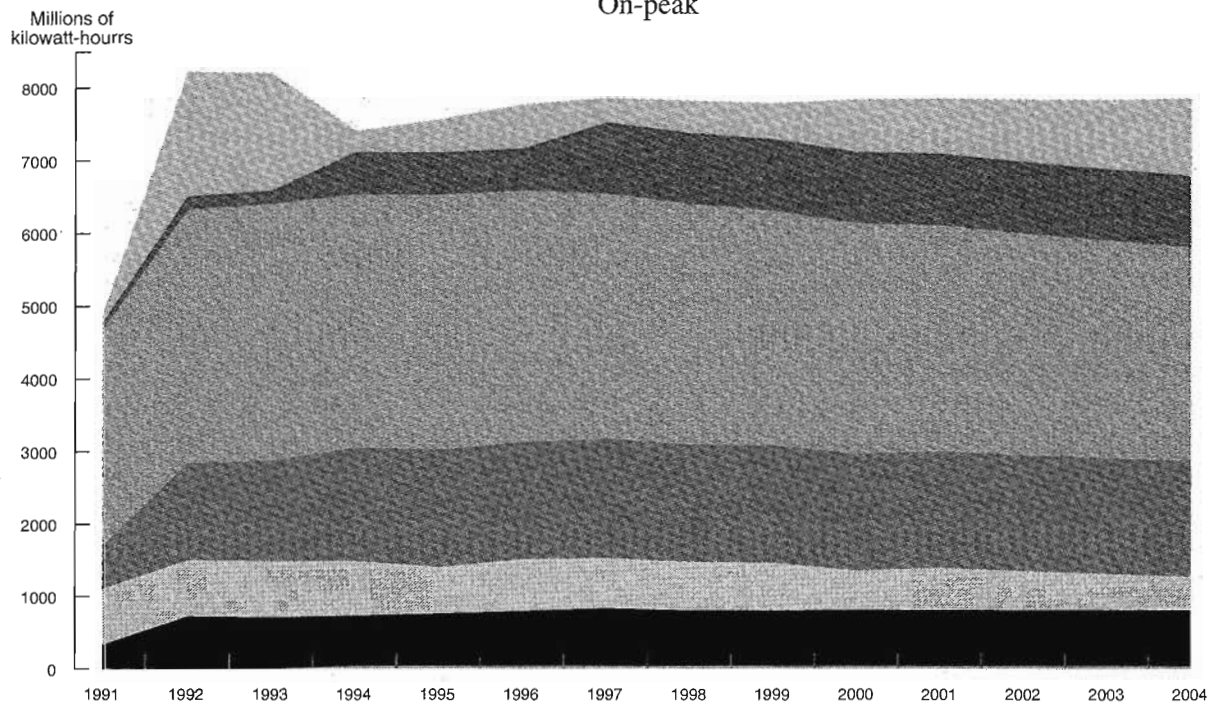
b) Transmission losses determined by contractual arrangements with utilities.

c) Based on assumption that existing 1979 power contract and 1981 capacity exchange agreement with Southern California Edison will be extended beyond 2004.



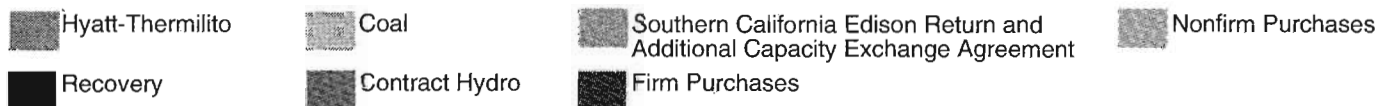


On-peak



Off-peak

Note: Sum of resources equals annual energy requirement.



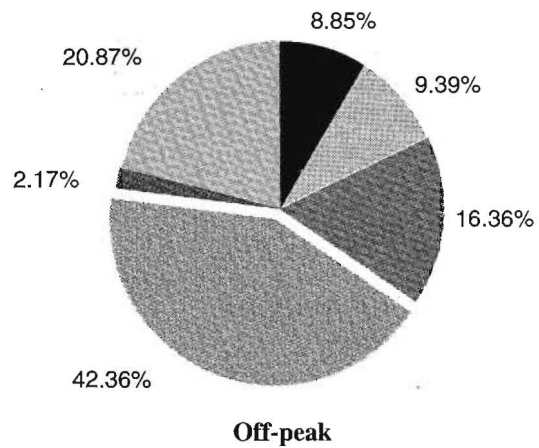
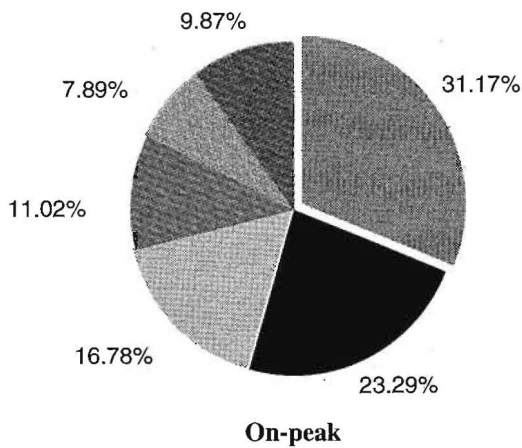
**Fig. 19. Estimated energy requirements and resources for years 1991 through 2004**

TABLE 26  
**Estimates of Total Amounts of On-Peak and Off-Peak Energy  
Produced in Year 2000, by Type of Resource**  
(Millions of kilowatt-hours)

<i>Type of Resource</i>	<i>Amounts</i>		
	<i>On-Peak</i>	<i>Off-Peak</i>	<i>Annual</i>
<b>Hydro</b>			
Hyatt-Thermalito	2,105.27	43.80	2,149.07
<b>Total</b>	<b>2,105.27</b>	<b>43.80</b>	<b>2,149.07</b>
<b>Recovery</b>			
Thermalito Diversion Dam	11.53	11.53	23.05
Gianelli Generation	186.06	0.00	186.06
San Luis Obispo	20.01	20.01	40.02
W. E. Wame	350.98	309.28	660.26
Mojave Siphon	43.09	60.37	103.45
Devil Canyon	901.14	309.65	1,210.79
Alamo	53.21	63.62	116.83
<b>Total</b>	<b>1,566.01</b>	<b>774.46</b>	<b>2,340.46</b>
<b>Coal</b>			
Reid Gardner Unit No. 4	450.77	539.91	990.68
<b>Total</b>	<b>450.77</b>	<b>539.91</b>	<b>990.68</b>
<b>Contract Hydro</b>			
Castaic	510.69	510.69	1,021.39
Pine Flat	193.38	193.38	386.76
Metropolitan Water District of Southern California Small Hydro	0.00	246.38	246.38
Metropolitan Water District of Southern California Colorado River Aqueduct	0.00	662.60	662.60
<b>Total</b>	<b>704.07</b>	<b>1,613.05</b>	<b>2,317.13</b>
<b>Power Contract</b>			
Hyatt Return	0.00	859.63	859.63
Devil Canyon Return	0.00	782.69	782.69
Alamo Return	0.00	116.83	116.83
Hyatt Additional	0.00	928.87	928.87
Devil Canyon Additional	0.00	350.64	350.64
Alamo Additional	0.00	29.48	29.48
<b>Total</b>	<b>0.00</b>	<b>3,068.13</b>	<b>3,068.13</b>
Capacity Exchange Agreement	360.00	93.76	453.76
Firm System Purchase	800.00	800.00	1,600.00
Nonfirm Purchases	172.72	728.15	900.87
PacifiCorp	438.00	175.20	613.20
TERA Corporation	1.98	1.98	3.97
<b>Grand Total</b>	<b>6,598.82</b>	<b>7,838.44</b>	<b>14,437.26</b>

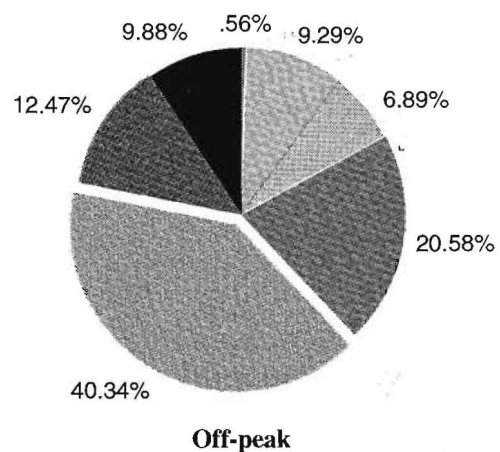
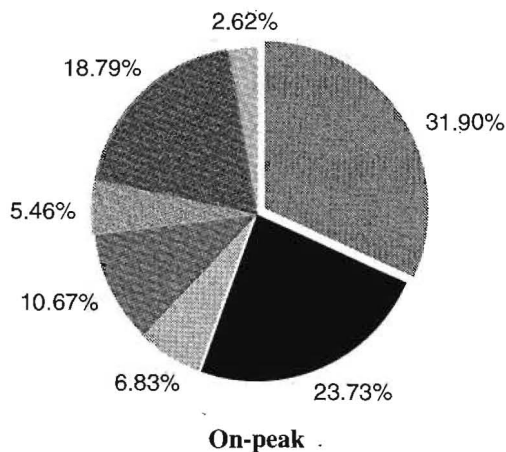
TABLE 27  
**Total Amounts of On-Peak and Off-Peak Electrical Capacity Requirements**  
**Projected for Years 1992 and 2000**  
(Millions of kilowatt-hours)

<i>Pumping Plants</i>	<i>Peak Demand During Month Highest Use</i>			
	<i>1992</i>		<i>2000</i>	
	<i>On-Peak</i>	<i>Off-Peak</i>	<i>On-Peak</i>	<i>Off-Peak</i>
<b>North Bay Aqueduct Plants</b>				
Barker Slough	2	2	1	1
Cordelia	1	1	2	2
<b>South Bay Aqueduct Plants</b>				
South Bay	15	15	15	15
Del Valle	1	1	1	1
<b>California Aqueduct Plants</b>				
Banks	111	261	221	250
Gianelli	1	142	51	199
Dos Amigos	38	73	41	62
Buena Vista	51	89	57	94
Wheeler Ridge	53	106	70	105
Chrisman	118	221	139	223
Edmonston	429	736	527	760
<b>East Branch Plants</b>				
Pearblossom	108	54	68	150
<b>West Branch Plants</b>				
Oso	4	75	33	41
<b>Coastal Branch Plants</b>				
Las Perillas	1	1	1	1
Badger Hill	2	2	3	3
Devil's Den	--	--	6	6
Bluestone	--	--	6	6
Polonio Pass	--	--	6	6
<b>Total Capacity Needed to Pump Entitlement Water</b>	<b>935</b>	<b>1,779</b>	<b>1,248</b>	<b>1,925</b>
Firm Contract Sales	112	112	0	0
Transmission Losses	53	103	62	96
Reserve Margin	250	250	128	128
Capacity to Southern California Edison	615	362	710	485
<b>Total Capacity Requirements</b>	<b>1,965</b>	<b>2,606</b>	<b>2,148</b>	<b>2,634</b>



**Year 1992**

On-peak energy requirements, 4,470 million kilowatt-hours  
Off-peak energy requirements, 8,222 million kilowatt-hours



**Year 2000**

On-peak energy requirements, 6,598 million kilowatt-hours  
Off-peak energy requirements, 7,838 million kilowatt-hours



**Fig. 20. Estimates of sources to meet on-peak and off-peak energy requirements for years 1992 and 2000**

TABLE 28  
**Estimated Amounts of Energy Resources and Unit Costs  
for Years 1991, 1995, 2000, and 2005**

<i>Energy Sources and Costs</i>	<i>Calendar Year</i>			
	<i>1991</i>	<i>1995</i>	<i>2000</i>	<i>2005</i>
<b>Energy Resources (Millions of kilowatt-hours)</b>				
Hyatt-Thermalito	793	2,125	2,149	2,149
SWP Recovery Plants				
Alamo	17	109	117	119
Castaic	471	1,007	1,021	1,024
Devil Canyon	569	1,170	1,211	1,219
Gianelli	34	147	186	186
Mojave Siphon	0	90	103	105
Reid Gardner	1,521	1,176	991	670
San Luis Obispo	0	0	40	40
Thermalito Diversion Dam	25	23	23	23
Warne	271	650	660	662
<b>Subtotal</b>	<b>3,701</b>	<b>6,497</b>	<b>6,501</b>	<b>6,197</b>
<b>Energy Sources from Short-Term Agreements</b>				
Metropolitan Water District of				
Southern California Hydroelectric Plants	211	260	246	219
Southern California Edison Exchange (a)	1,688	1,739	1,350	1,120
<b>Subtotal</b>	<b>1,899</b>	<b>1,999</b>	<b>1,596</b>	<b>1,339</b>
<b>Energy Sources from Long-Term Agreements</b>				
Pacific Corp	358	613	613	0
Pine Flat Powerplant	58	387	387	387
Tera Power Corp	6	4	4	0
<b>Subtotal</b>	<b>422</b>	<b>1,004</b>	<b>1,004</b>	<b>387</b>
Additional Firm Resources	493	800	1,600	3,200
<b>Purchases</b>				
Colorado River Aqueduct Energy Purchase	122	663	663	663
Energy Purchase	959	573	901	618
<b>Subtotal</b>	<b>1,081</b>	<b>1,236</b>	<b>1,564</b>	<b>1,281</b>
<b>Total Resources</b>	<b>7,596</b>	<b>11,536</b>	<b>12,265</b>	<b>12,404</b>
<b>SWP Energy Requirements</b>	<b>5,440</b>	<b>11,536</b>	<b>12,265</b>	<b>12,404</b>
Firm Energy Sales	570	0	0	0
Surplus Economy Energy Sales	1,586	0	0	0
<b>Resources' Cost (Mills per kilowatt-hour)</b>				
Hyatt-Thermalito	29	11	12	14
SWP Recovery Plants				
Alamo	40	40	40	40
Castaic	25	25	25	25
Devil Canyon	25	25	25	25
Gianelli	25	25	25	25
Mojave Siphon	-	82	82	82
Reid Gardner	9	82	95	112
San Luis Obispo	25	25	25	25
Thermalito Diversion Dam	31	36	36	36
Warne	25	25	25	25
<b>Total</b>	<b>234</b>	<b>376</b>	<b>390</b>	<b>409</b>
<b>Energy Sources from Short-Term Agreements</b>				
Metropolitan Water District of				
Southern California Hydroelectric Plants	40	48	55	64
Southern California Edison Exchange	--	--	--	--
<b>Total</b>	<b>40</b>	<b>48</b>	<b>55</b>	<b>64</b>
<b>Energy Sources from Long-Term Agreements</b>				
Pacificorp	35	51	56	--
Pine Flat Powerplant	165	34	37	40
TERA Power Corp	85	68	68	68
<b>Total</b>	<b>285</b>	<b>153</b>	<b>161</b>	<b>108</b>
Additional Firm Resources	--	64	79	98
CRA Energy Purchase	22	28	38	52
Energy Purchase, on-peak	27	34	47	63
Energy Purchase, off-peak	22	28	38	52
Capacity Purchase	--	7	10	54
Composite Cost of Resources	27	34	42	49
Firm Energy Sales	39	--	--	--
Value of On-peak Energy	27	--	--	--
Value of Off-peak Energy	22	--	--	--
Value of Capacity Sales	--	7	10	13
Net Cost of SWP Energy	30	34	42	53
Transmission Cost	5	2	2	2
<b>Effective Unit Cost</b>	<b>35</b>	<b>36</b>	<b>44</b>	<b>56</b>

a) Based on assumption that existing 1979 power contract and 1981 capacity exchange agreement with Southern California Edison will be extended beyond 2004.





## *Part V.*

# *Financing the State Water Project*

## **20. Analyzing Capital Requirements and**

### **Funding of the State Water Project 155**

General Analysis 155

Future Conditions 156

Capital Requirements 156

Initial Project Facilities 156

North Bay Aqueduct, Phase Two 156

Delta and Suisun Marsh Facilities 156

Banks Delta Pumping Plant 157

Coastal Branch of the California

Aqueduct 157

West Branch Aqueduct 157

East Branch Aqueduct Enlargement 157

East Branch Aqueduct 157

Power Generation and Transmission

Facilities 158

Additional Conservation Facilities 158

San Joaquin Drainage Facilities 158

Other Costs 158

Total Project Construction Expenditures 158

Davis-Grunsky Act Program Costs 158

Special Capital Requirements 159

Total Capital Requirements 159

Power Facilities Capital Requirements 159

Water Facilities Capital Requirements 159

Capital Financing 159

Burns-Porter Act 159

Revenue Bonds 160

Capital Resources 160

Power Bonds Through Series H 160

Future Power Revenue Bonds 160

Power Revenue Bonds 160

East Branch Enlargement, Series A

Through Series I Bonds 160

East Branch Enlargement, Future 160

Water System Facilities, Series A Through

Series I Bonds 161

Water System Facilities, Future 161

Water Revenue Bonds 161

Initial Project Facilities Bond

Proceeds 161

Davis-Grunsky Act Proceeds 161

California Water Fund Monies 161

Capital Resources Revenues 162

Revenue Transfers 162

Other Capital Financing 162

Total Financing 162

## **21. Forecasting Revenues, Expenses, and Future Costs of Water Service 167**

Project Revenues 167

Capital Resource Revenues 167

Water Contractors' Payments 168

Total Water Contractors' Payments 169

Revenue Bond Cover Adjustments 169

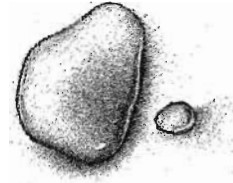
Federal Payments 169

Appropriations for Operating Costs to  
Recreation 169  
Local Agency Payments 169  
Revenue Bond Proceeds 170  
Interest Earnings 170  
Oroville-Thermalito Power Sale  
Contract 170  
Miscellaneous Revenues 170  
Other Revenues 170  
Total Operating Revenues 170  
Total Operating Revenues and Capital  
Resources Revenues 170  
Project Expenses 170  
Operations, Maintenance, and Power  
Costs 171  
Deposits to Replacement Reserves 171  
Deposits to Special Reserves 171  
Payments of Debt Service 172

Payments on Projected East Branch  
Enlargement Bonds 172  
Payments on Projected Revenue Bonds 172  
Total Payments 172  
Debt Service 172  
Water Fund Repayment 1733  
Total Operating Expenses and Debt  
Service 173  
Current Operating Funds 173  
Revenues Required for Current  
Construction 173  
Revenues Available for Future  
Construction 173  
Capital Resource Revenues Used for  
Construction 173  
Total Project Expenses 174  
Future Costs of Water Service 174



## 20. Analyzing Capital Requirements and Funding of the State Water Project



**T**HIS CHAPTER, ONE OF TWO IN THIS SECTION entitled “Financing the State Water Project,” includes information about (1) the general financial status of the State Water Project (SWP); (2) future conditions affecting SWP’s finances; and (3) SWP’s current financial status as it pertains to capital requirements and financing.

Chapter 21 includes information about SWP’s current financial status as it pertains to revenues and expenses as well as estimates of future costs of water service.

### *General Analysis*

The objective of SWP’s financing program is to maintain the financial integrity of SWP by providing sufficient funds to meet construction obligations; project operation, maintenance, power, and replacement (OMP&R) costs; bond debt service payments; and repayment of California Water Fund monies expended for construction.

In conducting the financial analysis of SWP’s operations, the Department concluded that projected payments from contractors and other revenues will be adequate to pay annual OMP&R costs and to meet all repayment obligations on funds used to finance SWP construction and other authorized costs during the period of 1991 through 2005.

In conducting the current analysis, the Department determined that through 2005 future capital requirements for power and water facilities and the Davis-Grunsky Act Program, along with special requirements for revenue bond financing, will be \$1,287 million. Construction costs for the following major SWP facilities planned for completion by 2005 are included in the financial analysis:

- Banks Pumping Plant, final four units
- Mojave Siphon power generation facilities
- Coastal Branch of the California Aqueduct, phase two
- Suisun Marsh facilities (first stage of final facilities)
- East Branch Enlargement of the California Aqueduct

The financial analysis does not include amounts for the costs, including costs of and financing of all facilities needed to develop the remaining yield necessary to meet the total 4.2 million acre-feet contractual commitment to long-term SWP water contractors. In addition, the analysis does not include amounts for costs of associated works that, although essential for realizing full SWP benefits, are financed and constructed by local interests or state agencies other than the Department of Water Resources, including on-shore recreational developments at SWP facilities and local distribution facilities.

THE FINANCIAL ANALYSIS INCLUDES COSTS FOR CONSTRUCTING FACILITIES PLANNED TO BE COMPLETED BY 2005.

## ***Future Conditions***

Conditions in the future may require changes in the financial analysis. For that reason, the Department reviews basic assumptions and updates the financial analysis annually. Contingencies that could result in a change in the financial analysis follow, listed in alphabetical order.

1. Alterations in schedules of currently planned construction for future facilities
2. Changes in economic conditions, including changes in interest rates and in SWP contractors' entitlements due to changes in water needs, water conservation, or reclamation
3. Completion of Delta transfer facilities
4. Development of additional sources of water not foreseen at this time
5. Deviations from the assumptions regarding actual rates of price escalations for future construction from those currently assumed for cost estimates
6. Enlargement of the San Luis Canal
7. Increases in capital costs related to the Kern Water Bank and other additional conservation facilities
8. Outcomes of certain lawsuits now pending before the courts (See "Litigation" in Chapter 2.)

## ***Capital Requirements***

Lines 1 through 18 in Table 29, "State Water Project Capital Requirements and Financing, June 30, 1991," include amounts of actual and projected SWP capital requirements through the year 2005. Actual and projected SWP construction expenditures are included in Table 30, "Capital Expenditures Through 1990," along with a preliminary allocation of such expenditures among various SWP purposes.

Estimates of future capital expenditures include allowances for escalation of construction and relo-

cation costs at 5 percent per year from 1991 through 2005. Land acquisition costs include a rate of escalation at 5.5 percent for 1991 and 5 percent per year thereafter. Capital expenditures for SWP also include requirements other than those for construction, such as disbursements under the Davis-Grunsky Act Program (Line 14), and special capital requirements under revenue bond financing (Line 15).

The following sections, organized according to line numbers in Table 29, contain information about the Department's current assumptions concerning the costs of each facility to be constructed through 2005.

Decisions to begin constructing facilities not yet under way will be made only after an examination of alternatives and completion of final environmental documentation and other review processes.

### ***Initial Project Facilities***

*Initial Project Facilities, Line 1.* Facilities included in the initial construction program are those completed before 1974 (see Bulletin 132-74, *Management of the State Water Project*, Chapter 2). Additional costs after 1973 and estimated costs of remaining work on the initial SWP facilities are not included.

### ***North Bay Aqueduct, Phase Two***

*North Bay Aqueduct, Phase II, Line 2.* Phase two of the North Bay Aqueduct, which connects with existing facilities, consists of pipelines, pumping plants, and a small reservoir necessary to divert water from the western Delta to Napa and Solano counties for urban use. Phase two became operational in May 1988.

### ***Delta and Suisun Marsh Facilities***

*Delta and Suisun Marsh Facilities, Line 3.* The historical amount in Column 1 includes planning costs for general Delta facilities and historical costs

associated with the previously planned Peripheral Canal and overland water delivery facilities for the western Delta.

Also included are historical planning costs for Suisun Marsh as well as construction costs for the Suisun Marsh Salinity Control Gates and an access road.

The projected amounts include Delta facilities' planning costs plus projected costs of constructing additional Suisun Marsh facilities. The 1991 amount includes \$6.3 million for purchase of land at Twitchell Island as part of the West Delta Water Management Program. The 1992 amount includes \$20 million for purchase of right-of-way for the Sherman Island wildlife management plan and \$50 million for right-of-way for the Clifton Court Forebay enlargement described in Chapter 12, "Monitoring Water Quality."

### ***Banks Delta Pumping Plant***

*Final Four Units at Banks Delta Pumping Plant, Line 4.* This line includes amounts of the costs of the final four 1,067-cfs units, which are scheduled to be operational by the end of 1991.

### ***Coastal Branch of the California Aqueduct***

*Coastal Branch of the California Aqueduct, Phase II, Line 5.* This line includes the planning costs for phase two of the Coastal Branch of the California Aqueduct. Future expenditures also include a projection of construction costs for this project.

### ***West Branch Aqueduct***

*West Branch Aqueduct, Line 6.* The amounts in Line 6 represent costs for all facilities on the West Branch except William E. Warne Powerplant. Warne Powerplant costs are included in Line 9.

Line 6 includes projected costs for the Vista Del Lago Visitors' Center and Gorman Creek channel modifications.

### ***East Branch Aqueduct Enlargement***

*East Branch Aqueduct Enlargement, Line 7.*

Line 7 includes amounts of expenditures for first-stage construction of the East Branch Enlargement, including the enlargement share of power plant costs at Mojave Siphon and Devil Canyon. (The remaining power plant costs are included in Line 9.) Estimated East Branch Enlargement costs by facility follow. Costs for Alamo Powerplant consist of expenditures for Unit 1 facilities allocated to enlargement. Construction of Unit 2 has been deferred.

<u>Facility</u>	<u>Dollar Amount (Millions)</u>
Aqueduct and Siphons	\$115.9
Pearblossom Pumping Plant	68.0
Alamo Powerplant	5.0
Mojave Siphon Powerplant	48.0
Devil Canyon Powerplant and Second Afterbay	186.7
Total	\$423.6

All costs in line seven are allocated to and repaid by the seven southern California contractors participating in the East Branch Enlargement.

### ***East Branch Aqueduct***

*East Branch Aqueduct, Non-Enlargement, Line 8.* The amounts in Line 8 represent all aqueduct costs on the East Branch not allocated to the enlargement project. Those costs include improvements constructed concurrently with the enlargement work. Costs for power plant construction at either Mojave Siphon or Devil Canyon are not included in this line.

## ***Power Generation and Transmission Facilities***

*Power Generation and Transmission Facilities, Line 9.* Estimated capital costs for facilities included in Line 9 are:

<i>Power Plants</i>	<i>Dollar Amount (Millions)</i>
Reid Gardner, Unit 4	\$265.6
Bottle Rock	121.9
South Geysers	49.9
Devil Canyon	36.7
Warne	84.5
Alamo	41.5
Mojave Siphon	39.2
Thermalito Diversion Dam	15.8
Subtotal	\$654.9
<i>Transmission Lines</i>	
Midway-Wheeler Ridge	10.7
Geysers-Lakeville	3.1
Total	\$668.7

For South Geysers, the amount includes expenditures to complete work in progress only. Remaining work has been deferred (see "South Geysers Powerplant" in Chapter 8).

For Devil Canyon and Mojave Siphon, amounts do not include East Branch Enlargement share of costs in Line 7 of Table 29.

### ***Additional Conservation Facilities***

*Additional Conservation Facilities, Line 10.* The amounts in Line 10 represent costs for planning of additional conservation facilities.

The historical cost in Column 1 includes \$31.4 million for the purchase of land for the Kern Water Bank. Projected expenditures for purchases of leases and additional lands for the Kern Water Bank are \$7.5 million in 1991 and \$5 million per year in 1992 and 1993.

Projected land purchases in 1991 for the Los Banos Grandes Project will be \$20 million. Costs for construction of additional conservation facilities are not included in the financial analysis.

### ***San Joaquin Drainage Facilities***

*San Joaquin Drainage Facilities, Line 11.* Included in Line 11 are amounts of the projected

costs of the San Joaquin Valley Drainage Monitoring Program. The four activities in this program are:

1. Drainage monitoring and evaluation
2. Drainage reduction
3. Drainage treatment
4. Evaporation pond investigation

See Chapter 12, "Monitoring Water Quality," for additional information about the drainage program.

The Department assumes that the costs of the drainage program will continue to be financed by California Water Fund appropriations. No costs included in Line 11 are charged to SWP water contractors.

### ***Other Costs***

*Other Costs, Line 12.* Amounts for other costs include items such as general design and construction costs, costs of completing operation and maintenance facilities, and costs of other completion activities for the initial facilities of the California Aqueduct. Portions of those costs ultimately will be allocated to aqueduct units described in the preceding paragraphs.

The 1991 amount also includes \$45 million for water purchases in 1991. Other items included in Line 12 are costs for constructing the Water Operation Center, costs of completing monitoring and control systems, and costs related to flood protection at Arroyo Pasajero in the San Luis reach of the California Aqueduct.

### ***Total Project Construction Expenditures***

*Total Project Construction Expenditures, Line 13.* The amount in this line is the total of lines 1 through 12.

### ***Davis-Grunsky Act Program Costs***

*Davis-Grunsky Act Program Costs, Line 14.* The Davis-Grunsky Program, a financial assistance pro-

gram for water development projects constructed by local public agencies, is described in Chapter 16, "Augmenting the Water Supply."

As of December 31, 1990, the Department had disbursed \$122 million (including \$8.8 million for administration) in grants and loans for 114 local agencies throughout the state. Funds for Department projects currently authorized will be disbursed prior to 1993.

### ***Special Capital Requirements***

*Special Capital Requirements Under Revenue Bond Financing, Line 15.* This line includes the amount of special capital requirements at the time revenue bonds are sold.

The financial analysis is based on the assumption that proceeds from any future revenue bonds will be used to pay for bond discounts, bond issuance costs, and debt service reserve requirements.

Application of proceeds to these special requirements for actual and assumed revenue bond sales is shown in Table 31, "Application of Revenue Bond Proceeds."

### ***Total Capital Requirements***

*Total Capital Requirements, Line 16.* The amount included in this line is the total of lines 13, 14, and 15.

### ***Power Facilities Capital Requirements***

*Power Facilities Capital Requirements, Line 17.* The amount in this line is the total of capital requirements for power facilities contained in lines 1 through 12 and that part of Line 15 associated with revenue bonds sold for power facilities.

### ***Water Facilities Capital Requirements***

*Water Facilities Capital Requirements, Line 18.* The amount in this line is the total of capital requirements for water facilities contained in lines 1

through 12 and that part of Line 15 associated with revenue bonds sold for water facilities.

## ***Capital Financing***

The State Water Project has been constructed with three general types of financing: general obligation bonds and oil revenues (Burns-Porter Act); revenue bonds, and capital resources. A general description of those funding sources may be found in this section along with specific information about those sources, arranged according to lines 19 through 33 of Table 29.

### ***Burns-Porter Act***

Burns-Porter financing is derived from the sale of California Water Resources Development Bonds (general obligation bonds) and the state's Tideland Oil Revenues deposited in the California Water Fund as authorized by the Burns-Porter Act (*California Water Code Sections 12930-12944*), which was approved by the voters in November 1960.

The Burns-Porter Act authorized an issue of \$1.75 billion of general obligation bonds of the state, which are repaid by revenues received according to the water supply contracts.

Of that bond issue authorization, \$130 million has been reserved specifically for the Davis-Grunsky Act Program, designed to provide grants and loans to public agencies for constructing local water projects.

Proceeds from the sale of general obligation bonds are deposited in the California Water Resources Development Bond Fund-Bond Proceeds Account, from which monies may be expended only for the construction of SWP facilities and for the Davis-Grunsky Act Program. Approximately 40 percent of the expenditures through 1990 for SWP construction and the Davis-Grunsky Act Program were financed with general obligation bonds.

Monies deposited in the California Water Fund are appropriated for purposes outlined in the

Burns-Porter Act. Such deposits are derived from a portion of the state's Tideland Oil Revenues according to a continuing authorization. In 1989 legislation was enacted to provide for a schedule to repay the California Water Fund as required by the Burns-Porter Act.

### ***Revenue Bonds***

Revenue bond financing is derived from the sale of revenue bonds as authorized by the Central Valley Project Act (*California Water Code* sections 11100-11925). The Department's authority to issue revenue bonds was confirmed by a decision of the California Supreme Court in 1963 (*Warne v. Harkness*, 60 Cal. 2d 579).

Proceeds from the sale of revenue bonds are deposited in the Central Valley Water Project Construction Fund, from which money is expended only for purposes specified in the resolution authorizing each bond sale. Those purposes, in addition to paying construction, planning, and right-of-way costs, may include:

1. Funding the Debt Service Reserve Account
2. Paying interest on bonds
3. Paying water system operating expenses during a specified period

As of June 30, 1991, the Department had sold \$2.4 billion of revenue bonds. That amount includes \$100 million of Water System Revenue Bonds, Series H, sold January 10, 1991, and \$180 million of Series I Bonds, sold May 14, 1991. Additional issues of revenue bonds are planned to fund future SWP construction.

### ***Capital Resources***

Capital resources financing is derived from payments and appropriations (including a portion of Tideland Oil Revenues) authorized by a variety of special contracts, cost-sharing agreements, and legislative actions concerning SWP, plus accrued interest on those funds.

Capital resources revenues are deposited in the Central Valley Water Project Construction Fund and may be expended for paying:

1. General obligation bond interest
2. Costs of constructing SWP facilities

According to the Department's financial management policy, the capital resources revenues are first used to cover any general obligation bond debt service that exceeds available revenues.

### ***Power Bonds Through Series H***

*Power Bonds Through Series H, Line 19.* This line includes the amounts of proceeds applied from power revenue bonds for the Oroville, Devil Canyon, Castaic, Pyramid, Reid Gardner, Bottle Rock, Alamo, South Geysers, and small hydro projects.

### ***Future Power Revenue Bonds***

*Future Power Revenue Bonds, Line 20.* No future power revenue bond sales are projected in the financial analysis.

### ***Power Revenue Bonds***

*Subtotal—Power Revenue Bonds, Line 21.* The amount in this line reflects the total of lines 19 and 20.

### ***East Branch Enlargement, Series A Through Series I Bonds***

*East Branch Enlargement, Series A Through Series I Bonds, Line 22.* As of June 30, 1991, the Department had sold \$890.03 million of Water System Revenue Bonds, Series A through Series I. The amount of proceeds allocated to the East Branch Enlargement was \$261 million for construction expenditures and \$45 million for bond discounts, interest costs, and debt service reserves.

### ***East Branch Enlargement, Future***

*East Branch Enlargement, Future, Line 23.* The Department estimates that approximately \$152 million in additional bonds will be required to complete construction of the East Branch Enlargement, first stage, and to pay for bond discounts, capitalized interest, and debt service reserve requirements.

### ***Water System Facilities, Series A Through Series I Bonds***

*Water System Facilities, Series A Through Series I Bonds, Line 24.* The amount of proceeds from Water System Revenue Bonds, Series A through Series I, allocated to SWP projects other than the East Branch Enlargement was \$584.03 million. Of that amount, \$160.03 million from Series F was used to refund a portion of the Power Facilities Revenue Bonds, Series G. Of the remaining \$424 million, \$371 million was used to pay for construction expenditures and \$53 million, to pay for bond discounts, capitalized interest, and debt service reserve requirements.

### ***Water System Facilities, Future***

*Water System Facilities, Future, Line 25.* Future water revenue bonds are needed to provide \$617 million for construction of SWP water system facilities and \$95 million for bond discounts, interest costs, and debt service reserve requirements.

### ***Water Revenue Bonds***

*Subtotal—Water Revenue Bonds, Line 26.* The amount in this line is the total of lines 20 through 25.

### ***Initial Project Facilities Bond Proceeds***

*Initial Project Facilities Bond Proceeds, Line 27.* This line includes amounts of initial financing costs for SWP facilities and for costs of planning certain additional conservation facilities. Financing of initial facilities from general obligation bonds was completed in mid-1972 and totaled \$1.444 billion—\$1.75 billion Burns-Porter Act authorization less \$130 million reserved for the Davis-Grunsky Act Program and \$176 million “offset” for additional conservation facilities. (The Burns-Porter Act provides that to the extent California Water Fund monies are expended, an equal amount of general obligation bonds are reserved [offset] for financing the construction of additional conservation facilities in certain watersheds.)

In mid-1972 the reservation of offset bonds was effectively limited to \$176 million—the total amount of California Water Fund monies expended up to that time. By mid-1972, all general obligation bonds authorized by the Burns-Porter Act had been offset, reserved for the Davis-Grunsky Act Program or used for SWP construction.

Approximately \$8.5 million of the offset bonds have been used to finance planning studies of the Middle Fork Eel River Development (see Line 10 of Table 29). This analysis is not based on the use of any offset bond proceeds to meet capital requirements. If at some time the state constructs an additional conservation facility, as specified in *Water Code* Section 12938, the remaining offset bonds could be sold.

### ***Davis-Grunsky Act Proceeds***

*Davis-Grunsky Act Program Bond Proceeds, Line 28.* For simplification, the entire \$130 million of capital expenditures authorized for the Davis-Grunsky Act Program under the Burns-Porter Act are listed as funded solely by proceeds from the sale of general obligation bonds. In fact, \$28 million from the California Water Fund was used for the program in lieu of bond proceeds prior to 1969.

In making the financial analysis, the Department assumes that all authorized Davis-Grunsky bonds will be sold prior to 1992.

### ***California Water Fund Monies***

*Application of California Water Fund Monies (Tideland Oil Revenues), Line 29.* The Burns-Porter Act provides that any available money in the California Water Fund must be used for construction in lieu of proceeds from the sale of general obligation bonds.

When the Burns-Porter Act became effective in late 1960, approximately \$97 million had been accumulated in the fund. That balance, plus subsequent appropriations, interest earnings, and other miscellaneous income to the fund through Decem-

ber 31, 1990, was used to finance a total of \$504 million of SWP's costs.

### ***Capital Resources Revenues***

*Application of Capital Resources Revenues to Construction, Line 30.* This line includes the amount of the application of Capital Resources Revenues for capital expenditures (see description for Line 1, "Capital Resource Revenues," on the first page of the next chapter).

### ***Revenue Transfers***

*Revenue Transfers Applied, Line 31.* This line includes amounts of monies that are assumed to be transferred to the California Water Fund according to provisions of the Burns-Porter Act and subse-

quently reappropriated to construction (see lines 35 and 36 in Table 32, "State Water Project Revenues and Expenses, June 30, 1991"). Projected amounts for 1991 through 2000 include funds to finance expenditures for San Joaquin drainage facilities as indicated in Line 11 of Table 29.

### ***Other Capital Financing***

*Subtotal—Other Capital Financing, Line 32.* The amount in this line is the total of lines 27 through 31.

### ***Total Financing***

*Total Financing of Capital Requirements, Line 33.* The amount in this line is the total of lines 21, 26, and 32.



TABLE 29  
State Water Project Capital Requirements and Financing, June 30, 1991  
(Thousands of dollars)

Line No.	Line Item	Calendar Year																Total	Total
		1952-1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	1991-2005	1952-2005
Capital Requirements																			
1.	Initial Project Facilities	2,202,316	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,202,316
2.	North Bay Aqueduct-Phase II	88,789	133	703	256	910	2	0	0	0	0	0	0	0	0	0	0	2,004	90,793
3.	Delta & Suisun Marsh Facilities	146,253	10,811	75,430	11,822	16,689	8,744	1,845	1,420	1,491	1,565	1,644	0	0	0	0	0	131,461	277,714
4.	Final 4 Units at Banks Delta Pumping Plant	31,604	16,493	6,412	8,508	2,628	0	0	0	0	0	0	0	0	0	0	0	34,041	65,645
5.	Coastal Branch Aqueduct-Phase II	8,221	4,987	25,279	85,857	106,401	76,639	9,993	192	0	0	0	0	0	0	0	0	309,348	317,569
6.	West Branch Aqueduct	83,860	6,060	5,475	5,527	1,188	25	16	7	0	0	0	0	0	0	0	0	18,298	102,158
7.	East Branch - Enlargement	209,862	81,600	70,929	45,887	14,501	854	0	0	0	0	0	0	0	0	0	0	213,771	423,633
8.	East Branch - Non-Enlargement	54,923	17,412	14,239	8,810	2,406	27	6	0	0	0	0	0	0	0	0	0	42,900	97,823
9.	Power Generation & Transmission Facilities	633,351	11,799	13,631	8,048	5,009	700	3	0	0	0	0	0	0	0	0	0	39,190	672,541
10.	Additional Conservation Facilities	96,246	37,000	17,820	15,608	16,378	17,196	18,057	9,347	9,815	7,278	7,641	4,572	4,572	4,572	4,572	4,572	179,000	275,246
11.	San Joaquin Drainage Facilities	39,557	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	0	0	0	0	0	22,000	61,557
12.	Other Costs	165,530	77,731	31,116	13,762	5,975	5,123	675	631	648	360	359	0	0	0	0	0	136,380	301,910
13.	Total Project Construction Expenditures	3,760,512	266,226	263,234	206,285	174,285	111,510	32,795	13,797	14,154	11,403	11,844	4,572	4,572	4,572	4,572	4,572	1,128,393	4,888,905
14.	Davis-Grunsky Act Program Costs	122,902	7,098	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,098	130,000
15.	Special Capital Requirements Under Revenue Bond Financing	344,643	36,346	34,581	31,270	26,697	17,159	5,830	0	0	0	0	0	0	0	0	0	151,883	496,526
16.	Total Capital Requirements	4,228,057	309,670	297,815	237,555	200,982	128,669	38,625	13,797	14,154	11,403	11,844	4,572	4,572	4,572	4,572	4,572	1,287,374	5,515,431
17.	Less Power Facilities Capital Requirements	1,232,514	57,499	53,871	49,215	19,510	1,554	3	0	0	0	0	0	0	0	0	0	181,652	1,414,166
18.	Water Facilities Capital Requirements	2,995,543	252,171	243,944	188,340	181,472	127,115	38,622	13,797	14,154	11,403	11,844	4,572	4,572	4,572	4,572	4,572	1,105,722	4,101,265
Financing of Capital Requirements																			
Power Revenue Bond Proceeds:																			
19.	Power Bonds through Series H	1,161,588	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,161,588
20.	Future Power Revenue Bonds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21.	Subtotal Power Revenue Bonds	1,161,588	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,161,588
Water Revenue Bond Proceeds:																			
22.	East Branch Enlargement-Series A thru I	138,507	167,756	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167,756	306,263
23.	East Branch Enlargement - Future	0	0	83,000	52,000	16,146	854	0	0	0	0	0	0	0	0	0	0	152,000	152,000
24.	Water System Facilities-Series B thru I	287,251	129,766	6,983	0	0	0	0	0	0	0	0	0	0	0	0	0	136,749	424,000
25.	Water System Facilities-Future	0	0	169,012	178,089	182,257	125,615	36,425	11,597	9,005	0	0	0	0	0	0	0	712,000	712,000
26.	Subtotal Water Revenue Bonds	425,758	297,522	258,995	230,089	198,403	126,469	36,425	11,597	9,005	0	0	0	0	0	0	0	1,168,505	1,594,263
Other Capital Financing																			
27.	Initial Project Facilities Bond Proceeds	1,452,390	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,452,390
28.	Davis-Grunsky Act Program Bond Proceeds	122,902	7,098	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,098	130,000
29.	Application of California Water Fund Monies (Tideland Oil Revenues)	504,280	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	504,280
30.	Application of Capital Resources Revenues to Construction	525,239	2,850	36,620	5,266	379	0	0	0	0	0	0	0	0	0	0	0	45,115	570,354
31.	Revenue Transfers Applied	35,900	2,200	2,200	2,200	2,200	2,200	2,200	2,200	5,149	11,403	11,844	4,572	4,572	4,572	4,572	4,572	66,656	102,556
32.	Subtotal Other Capital Financing	2,640,711	12,148	38,820	7,466	2,579	2,200	2,200	2,200	5,149	11,403	11,844	4,572	4,572	4,572	4,572	4,572	118,869	2,759,580
33.	Total Financing of Capital Requirements	4,228,057	309,670	297,815	237,555	200,982	128,669	38,625	13,797	14,154	11,403	11,844	4,572	4,572	4,572	4,572	4,572	1,287,374	5,515,431

TABLE 30  
Capital Expenditures Through 1990  
(Thousands of dollars)

Facilities and Construction Divisions	Expenditures Incurred Through 1990	Future Expenditures	Total	Preliminary Allocation Among Project Purposes			
				Water Supply and Power Generation	Flood Control (a)	Recreation and Fish and Wildlife Enhancement	Other (b)
<b>Project Construction Expenditures</b>							
Upper Feather River Division	17,374	3	17,377	1,179	0	16,198	0
Oroville Division	561,513	8,097	569,610	480,101	70,661	18,848	0
North Bay Aqueduct	92,756	2,004	94,760	94,760	0	0	0
Delta Facilities	228,826	198,961	427,787	388,614	0	36,337	2,836
South Bay Aqueduct	75,551	4,741	80,292	58,308	7,635	14,349	0
<b>California Aqueduct</b>							
North San Joaquin Division	213,970	57,186	271,156	261,634	0	9,522	0
San Luis Division	221,379	8,433	229,812	218,517	0	11,295	0
South San Joaquin Division	288,404	25,925	314,329	296,592	0	17,737	0
Tehachapi Division	315,102	3,509	318,611	300,485	0	18,126	0
Mojave Division	256,449	19,623	276,072	246,686	0	29,386	0
Santa Ana Division	195,641	13,642	209,283	186,438	0	22,845	0
West Branch	514,528	18,298	532,826	499,586	0	33,240	0
Coastal Branch	22,587	309,348	331,935	331,934	0	0	1
<b>Subtotal, California Aqueduct</b>	<b>2,028,060</b>	<b>455,964</b>	<b>2,484,024</b>	<b>2,341,872</b>	<b>0</b>	<b>142,151</b>	<b>1</b>
Small Hydroelectric Power Generating Facilities	59,662	40,812	100,474	95,189	0	5,285	0
Off-Aqueduct Power Generating Facilities	438,477	5,819	444,296	444,296	0	0	0
East Branch Enlargement	209,862	213,771	423,633	423,633	0	0	0
San Joaquin Drainage Facilities	39,557	31,808	71,365	0	0	0	71,365
Planning and Preoperations (c)	8,569	146,500	155,069	155,069	0	0	0
Unassigned	305	19,721	20,026	20,026	0	0	0
<b>Subtotal, Project Construction Expenditures</b>	<b>3,760,512</b>	<b>1,128,201</b>	<b>4,888,713</b>	<b>4,503,047</b>	<b>78,296</b>	<b>233,168</b>	<b>74,202</b>
<b>Other Capital Requirements</b>							
Davis-Grunsky Act Program	122,902	7,098	130,000	0	0	0	130,000
<b>Total Capital Expenditures</b>	<b>3,883,414</b>	<b>1,135,299</b>	<b>5,018,713</b>	<b>4,503,047</b>	<b>78,296</b>	<b>233,168</b>	<b>204,202</b>

a) Reflects DWR's allocation to this purpose, irrespective of federal payments.

b) Includes costs currently unassigned to purpose, planning costs of deleted features of project facilities, initial costs of inventoried items, joint costs assigned to the federal government, and costs assigned to Davis-Grunsky Act Program.

c) Future expenditures include \$76,300,000 for purchase of Sherman Island and Clifton Court Forebay enlargement for South Delta facilities and Twitchell Island land purchase for West Delta facilities.

TABLE 31  
Application of Revenue Bond Proceeds  
(Millions of dollars)

Bond Series (a)	Application of Revenue Bond Proceeds						
	Construction Expenditures	Other Capital Requirements					Total Principal Amount of Bonds
		Reimbursement of General Fund	Bond Interest Through One Year Following Completion of Construction	Operating Costs for One Year Following Completion of Construction	Bond Discount and Financing Costs (b)	Subtotal	
Oroville	218.0	2.6	19.9	1.5	3.0	27.0	245.0
Devil Canyon-Castaic	126.4	0.0	10.0	0.7	2.1	12.8	139.2
Pyramid Series A	74.0	0.0	19.2	1.0	1.6	21.8	95.8
Reid Gardner Series B	146.1	0.0	41.9	0.0	12.0	53.9	200.0
Reid Gardner Series C	91.1	0.0	17.9	7.9	8.1	33.9	125.0
Small Hydro-South Geysers Series D	49.6	0.0	19.9	0.0	5.5	25.4	75.0
Bottle Rock Series E	96.9	0.0	22.0	3.7	2.4	28.1	125.0
Alamo-South Geysers Series F	59.1	0.0	14.2	0.0	1.7	15.9	75.0
Reid Gardner Series G	1.6	0.0	0.0	0.0	237.9 (c)	237.9	239.5
Power Facilities Series H	22.2	0.0	0.0	0.0	184.5 (d)	184.5	206.7
East Branch Enlargement Series A	108.3	0.0	12.6 (e)	0.0	11.1	23.7	132.0
Water System Facilities Series B	97.4	0.0	0.0	0.0	2.6	2.6	100.0
Water System Facilities Series C	0.6	0.0	0.0	0.0	8.4 (f)	8.4	9.0
Water System Facilities Series D	95.0	0.0	3.8	0.0	1.2	5.0	100.0
Water System Facilities Series E	0.4	0.0	0.0	0.0	8.6 (g)	8.6	9.0
Water System Facilities Series F	0.0	0.0	0.0	0.0	160.0 (h)	160.0	160.0
Water System Facilities Series G	86.6	0.0	4.6	0.0	8.8	13.4	100.0
Water System Facilities Series H	85.0	0.0	6.2	0.0	8.8	15.0	100.0
Water System Facilities Series I	158.9	0.0	0.0	0.0	21.1	21.1	180.0
<b>Subtotal</b>	<b>1,517.2</b>	<b>2.6</b>	<b>192.2</b>	<b>14.8</b>	<b>689.4</b>	<b>899.0</b>	<b>2,416.2</b>
Water System Facilities	617.0	0.0	27.0	0.0	68.0	95.0	712.0
East Branch Enlargement	131.4	0.0	5.7	0.0	14.9	20.6	152.0
<b>Grand Total</b>	<b>2,265.6</b>	<b>2.6</b>	<b>224.9</b>	<b>14.8</b>	<b>772.3</b>	<b>1,014.6</b>	<b>3,280.2</b>

a) Actual bond issue for all except Water System facilities and East Branch Enlargement; assumed bond issue through year 2005 for Water System facilities and East Branch Enlargement.

b) Bond discount and financing costs include debt service reserves for East Branch Enlargement Series A; Water System Facilities Series G, H, and I.

c) Total discount was \$2.8 million. Remaining amount was used to refund Reid Gardner Series B bonds.

d) Total discount was \$2.7 million. Remaining amount was used to refund portions of Reid Gardner Series C and Small Hydro-South Geysers Series D Bonds.

e) Interest capitalized 1-1/2 years.

f) Includes funds applied to Water System Facilities Series B and C debt service reserves.

g) Includes funds applied to Water System Facilities Series D and E debt service reserves.

h) Includes \$11.0 million for debt service reserves and \$9.0 million for discounts. Remaining amount was used to refund a portion of Reid Gardner Series G bonds.



# 21. Forecasting Revenues, Expenses, and Future Costs of Water Service



THE CURRENT FINANCIAL ANALYSIS OF THE State Water Project (SWP) is reflected in Table 29, "State Water Project Capital Requirements and Financing, June 30, 1991." The table may be found at the end of Chapter 20.

This chapter includes information pertaining to project revenues and expenses and future costs of water service. The information about project revenues and expenses is arranged according to line numbers of Table 32, "State Water Project Revenues and Expenses, June 30, 1991," which may be found at the end of this chapter.

Table 32 includes data concerning (1) actual and anticipated revenues; and (2) the application of revenues to payments for SWP operating expenses, principal and interest on bonds, and a limited number of construction projects.

## Project Revenues

State Water Project revenues, consisting primarily of SWP contractor payments, are deposited in two funds: the Central Valley Water Project Revenue Fund, in which all revenues pledged to revenue bonds are placed, and the California Water Resources Development Bond Fund-Systems Revenue Account, in which all other SWP operating revenues are placed. Use of those funds is limited to operating costs and debt service, except that

revenues in excess of such costs can be transferred to the California Water Fund.

Specific information about project revenues, arranged to correspond with lines 1 through 19 of Table 32, follows.

## Capital Resource Revenues

*Capital Resources Revenues, Line 1.* Seven sources of those revenues are (1) federal payments for SWP capital expenditures; (2) appropriations for capital cost allocated to recreation; (3) appropriations for SWP capital expenditures prior to the Burns-Porter Act and under SB 261 (1968); (4) payments from Los Angeles Department of Water and Power for Castaic power development; (5) water contractor advances for construction of requested works; (6) investment earnings on the Capital Resources Account; and (7) investment earnings on unexpended revenue bond proceeds.

Historically, appropriations for capital costs allocated to recreation and fish and wildlife enhancement have amounted to \$5 million per year, appropriated by the California Legislature from Tideland Oil Revenues. According to legislation enacted in 1989, the amount owed to the SWP by the state for costs allocated to recreation is offset against the amount the SWP owes the California Water Fund.

STATE WATER  
PROJECT  
REVENUES  
PRIMARILY  
CONSIST OF  
PAYMENTS  
FROM  
LONG-TERM  
WATER  
CONTRACTORS.

## ***Water Contractors' Payments***

*Water Contractors' Payments, Lines 2 Through 7.* Amounts in those lines reflect amounts of the separate elements of water contractors' payments.

Figures in Line 4 also include revenues sufficient to cover costs associated with sales of excess power. A detailed explanation of payments identified in lines 2 through 7 may be found in Appendix B. A brief description of the payments follows.

Operations, maintenance, power, and replacement costs (OMP&R) are repaid as they are incurred as part of the Transportation Charge; therefore, no interest charges are included. Construction costs included the Transportation Charge and all construction and annual OMP&R costs included in the Delta Water Charge are to be repaid with interest at the Project Interest Rate.

The Project Interest Rate, as defined in Article 1(r) of the standard provisions for water supply contracts, is the weighted average of the rates paid on securities issued and loans obtained to finance SWP facilities, excluding Oroville Revenue Bonds.

According to the original contract provisions, the basis for determining the Project Interest Rate was the weighted average of rates paid on general obligation bond sales only. In 1969, after Oroville Revenue Bonds were issued, the contract was amended to expand the basis to include rates on all other securities sold and loans obtained thereafter for financing SWP facilities, including revenue bonds (see Bulletin 132-70, *Management of the State Water Project*, page 28).

However, not all proceeds from the sale of revenue bonds are melded into the calculation of the Project Interest Rate. Only those proceeds applied to construction costs (the only application of general obligation bonds permitted by law) and those consumed by the bond discount (a component of the total interest cost of a revenue bond issue) are included in the calculation (see Table 33, "Effect of Revenue Bond Proceeds on Project Interest Rate").

Calculations for determining the Project Interest Rate do not include proceeds from the sale of

Power Revenue Bonds for off-aqueduct power facilities, revenue bonds for the East Branch enlargement, or Water Revenue Bonds covered under the Water Revenue Bond Amendment. Table 34, "Actual Bond Sales and Project Interest Rates, by Date of Sale," includes basic information about the calculation of the Project Interest Rate. The information about contractors' water charges in Appendix B is based on known conditions and supports the Department's determination of 1992 water charges, to be billed July 1, 1991. However, information about significant differences between the sum of future charges shown in lines 2 through 7 and the substantiation of 1991 charges included in Appendix B follows.

1. Future capital costs described in Appendix B are based on the prices prevailing on December 31, 1990. Those costs presented in the financial analysis include allowances for price escalation.
2. Pre-1990 charges described in Appendix B represent the charges as they should have been according to currently known conditions. Pre-1990 charges shown in Table 19 are those actually paid under previously determined bills.
3. Charges described in Appendix B are unadjusted for past overpayments or underpayments. Charges included in Table 19 for 1990 and thereafter have been adjusted for any apparent overpayments or underpayments of pre-1990 charges.
4. The charges described in Appendix B for East Branch Enlargement costs include the amounts for debt service and 25 percent cover for Series A and the East Branch Enlargement share of the Series D, E, H, and I bonds. Charges in Table 19 also include amounts of the debt service and cover for assumed future bonds.
5. The water bond revenue surcharge included in Appendix B applies only to the Series B through Series I bonds. Surcharge values included in Table 19 apply to Series B

through Series I bonds and to assumed future issues required to finance any SWP construction.

### ***Total Water Contractors' Payments***

*Subtotal, Water Contractors' Payments, Line 8.*

The amount in this line is the total of Lines 2 through 7.

### ***Revenue Bond Cover Adjustments***

*Revenue Bond Cover Adjustments, Line 9.* The amount in this line represents the credit to contractors resulting from the cover of 25 percent of one year's debt service for Off-Aqueduct Power Facility Bonds and Water System Revenue Bonds. Cover is collected as required by the bond resolutions to provide security to the bondholders.

For off-aqueduct facilities, that amount is charged annually to contractors and collected through the minimum OMP&R component of the Transportation Charge. For the East Branch enlargement facilities, the cover is collected through the capital component of the East Branch Enlargement Transportation Charge. For water system facilities, that amount is collected through the water bond surcharge.

If not needed to meet annual bond service, the cover is credited back to the contractors in the following year. The amount varies in proportion to the debt service for these facilities.

### ***Federal Payments***

*Federal Payments for Project Operating Costs, Line 10.* According to the December 31, 1961, agreement between California and the United States, the Department operates and maintains the San Luis Joint-Use Facilities.

According to the January 12, 1972, supplement to the agreement, the U.S. Bureau of Reclamation (USBR) paid 45 percent of OM&R costs for those activities. (The percentage does not apply to power costs; USBR and the Department provide their own

power to pump their water through the joint facilities.)

The percentage paid by USBR is reviewed every five years by USBR and the Department. For the calendar years 1981 through 1986, the federal share of operations and maintenance costs was 44.47 percent. The most recent review of the percentage paid by USBR, completed in 1987, resulted in a federal share of 44.09 percent for calendar years 1987 through 1990. The amounts in Line 10 are based on the assumption that the federal share will continue at 44.09 percent for calendar years 1991 through 2005.

### ***Appropriations for Operating Costs to Recreation***

*Appropriations for Operating Costs Allocated to Recreation, Line 11.* In passing the Davis-Dolwig Act, the California Legislature declared its intent that, except for funds provided pursuant to AB 12 (1966), the Department's budget will include appropriations from the General Fund of monies necessary for enhancement of fish and wildlife and recreation in connection with state water projects.

Annual OMP&R costs allocated to recreation and fish and wildlife enhancement are paid by annual General Fund appropriations. For fiscal years 1983-84 through 1989-90, no funds were appropriated for enhancement of fish and wildlife and recreational purposes. No appropriations are indicated for 1991 through 2005.

According to legislation enacted in 1989, the amount owed to SWP by the state for costs allocated to fish and wildlife and recreational enhancement is offset against the amount SWP owes the California Water Fund.

### ***Local Agency Payments***

*Local Agency Payments According to Davis-Grunsky Loan Repayment Contracts, Line 12.* More than \$48 million of loan funds have been disbursed as of December 31, 1990. Loan repay-

ments received through December 31, 1990, are indicated in the 1952—1990 entry.

The future amounts on Line 12 are based on the loans currently outstanding. Repayment on any future loans made under the Davis-Grunsky Act Program was assumed to be beyond the period covered by the financial analysis.

### ***Revenue Bond Proceeds***

*Revenue Bond Proceeds, Line 13.* The amount in this line includes bond proceeds that are classified as special reserves according to revenue bond financing described in Line 15 of Table 29. Those proceeds, used for capitalized OMP&R costs, revenue bond service, and debt service reserves, are not classified as revenues but are included in this line to simplify the financial presentation.

### ***Interest Earnings***

*Interest Earnings, Line 14.* The amount in this line includes interest earnings on unexpended proceeds from the sale of general obligation bonds, interest on operating reserves, and other short-term investment earnings on SWP revenues.

### ***Oroville-Thermalito Power Sale Contract***

*Payments According to Oroville-Thermalito Power Sale Contract, Line 15.* Before April 1, 1983, all power generation from Hyatt Powerplant and Thermalito Powerplant was sold to three electric utilities, Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company, according to a power sale contract dated November 29, 1967. The 1952—1990 entry includes amounts of final settlement of payments under the contract.

### ***Miscellaneous Revenues***

*Miscellaneous Revenues, Line 16.* The amount in this line represents all other operating revenues not included in lines 2 through 15.

### ***Other Revenues***

*Subtotal, Other Revenues, Line 17.* The amount in this line is the total of lines 10 through 16.

### ***Total Operating Revenues***

*Total Operating Revenues, Line 18.* The amount in this line is the total of lines 8, 9, and 17.

### ***Total Operating Revenues and Capital Resources Revenues***

*Total Operating Revenues and Capital Resources Revenues, Line 19.* The amount in this line is the total of lines 1 and 18.

## ***Project Expenses***

Project expenses include operations, maintenance, and power (OM&P) costs; deposits to replacement reserves; deposits to special reserves (see description of Line 22); debt service; deposits to operating reserves; repayment of the California Water Fund; and application of Capital Resources Revenues to construction (see Line 30 in Table 29).

Revenue bond proceeds earmarked for debt service during construction and the first year's operating expenses are deposited in the Central Valley Water Project Construction Fund and disbursed according to resolutions authorizing the issuance of such bonds.

Water contractor revenues associated with power facility operating costs and debt service are deposited in the Central Valley Water Project Revenue Fund for appropriate disbursement. All other operating revenues, deposited in the California Water Revenue Fund-Systems Revenue Account, are disbursed in accordance with the following four priorities of use as specified in the Burns-Porter Act:

1. SWP operations, maintenance, power, and replacement costs
2. General obligation bond debt service
3. Repayment of expenditures from the California Water Fund
4. Deposits to a reserve for future SWP construction

Specific information about project expenses, arranged according to lines 20 through 37 in Table 32 follows.



## ***Operations, Maintenance, and Power Costs***

*Project Operations, Maintenance, and Power Costs, Line 20.* Historical and projected OMP&R costs are included in Table 35, "Operations, Maintenance, Power, and Replacement Costs, by Facility, Composition, and Purpose," according to project facility, composition, and project purpose. Line 20 represents the OM&P portion of the costs included in Table 35.

Table 35 and Line 20 also include amounts of the operations and maintenance costs for the federal share of joint facilities and those OM&P costs allocated to recreation, which are intended to be offset by revenues shown in lines 10 and 11.

Allowances for cost escalation are included in OM&P costs through 1991. Allowances for further future long-term price escalation are not included in these estimates, because changes in OM&P costs do not substantially affect the overall results of the financial analysis. (For the most part, changes in OM&P costs cause direct offsetting changes in operating revenues.)

Power cost is the major item of annual operating expense for the SWP. Assumptions regarding future power sources and costs are examined in Chapter 19, "Forecasting Power Requirements, Resources, Costs, and Sales." Line 17 also includes amounts of costs associated with power transactions that result in the sale of power not required for the delivery of water.

## ***Deposits to Replacement Reserves***

*Deposits to Replacement Reserves, Line 21.* This line includes amounts of funds set aside as required by contract for replacement of existing SWP facilities. As of December 31, 1990, \$38.6 million had been spent for replacement costs; the balance of the replacement reserve as of this date was \$140.3 million. Replacement reserve amounts are also indicated in Table 35.

## ***Deposits to Special Reserves***

*Deposits to Special Reserves Under Revenue Bond Financing, Line 22.* Line 22 includes amounts for two major components: special reserves deposits and capital resources revenue carryover from prior years used for construction in the current year. Special reserves deposits are the net of several income and expenditure items. The income items are deposits related to revenue bonds as follows:

- Proceeds set aside to pay bond interest during construction (capitalized interest)
- Proceeds set aside for the first year of operating costs (capitalized O&M)
- Water contractors' payments or bond proceeds set aside for debt service reserves
- Water contractors' payments for revenue bond cover requirements

The 1952—1990 entry for Line 22 of Table 32 includes amounts of deposits to special reserves for all past bond sales indicated in tables 29 and 32. For future revenue bonds, deposits to special reserves are included in the year of assumed sale. The amount in the 1952—1990 column also includes amounts of advances to the Department's revolving fund for working funds to purchase mobile equipment and to meet day-to-day operating expenses.

The expenditure items are:

- Debt service cover payments returned to water contractors
- Debt service reserve payments returned to water contractors
- Surplus account funds returned to water contractors or applied to meet expenses
- Total capitalized interest paid out
- Total capitalized O&M paid out

Special reserves, reduced over time as reserved amounts, are used for their respective purposes. The amount shown each year in Line 22 indicates the change from the previous year. A negative

number indicates a withdrawal of special reserves to meet expenses, while a positive number indicates a deposit.

### ***Payments of Debt Service***

*Payment of Debt Service on Bonds Sold Through June 30, 1991, Lines 23 and 24.* The amounts in these two lines represent the total amount of principal and interest payments on bonds sold to date. Table 36, "Annual Debt Service on Bonds Sold Through June 30, 1991," represents a summary of payments on general obligation bonds (Series A through V water bonds), power revenue bonds by project, and water system revenue bonds.

The last bonds, sold on May 14, 1991, were the Series I Water System Revenue Bonds. Proceeds from the Series I bonds were used to provide funds for construction, fund the debt service reserve account, and to pay bond discount and interest costs.

Since 1978, the bond trustee has been retiring Oroville Revenue Bonds prior to the fixed maturity date as follows:

<u>Year</u>	<u>Bonds Retired</u>	<u>Cost</u>
1978	\$4,045,000	\$3,845,099
1979	9,730,000	8,933,093
1980	1,350,000	1,227,600
1981	2,865,000	1,805,862
1982	15,890,000	9,623,312
1983	18,865,000	16,776,000
1984	7,640,000	6,807,020
1985	10,215,000	9,044,000
1986	7,175,000	6,598,000
1987	8,980,000	8,808,104
1988	3,815,000	3,676,482
1989	30,690,000	30,390,215
1990	7,210,000	7,164,817

The schedule for service of Oroville Revenue Bonds indicated in Table 36 is based on a revised bond maturity schedule that reflects these early bond retirements. Line 24 also includes over \$0.3 million in interest payments to the General Fund for the temporary loan of \$46.8 million in 1970. That loan was repaid by proceeds from the sale of Series N Water Bond Anticipation Notes.

### ***Payments on Projected East Branch Enlargement Bonds***

*Payments on Projected East Branch Enlargement Bonds, Lines 25 and 26.* These lines include amounts of the projected annual service amounts for future water revenue bonds shown on Line 23 of Table 29 for the East Branch Enlargement. Assumptions concerning the service on these future bonds are as follows:

- Interest costs for the water revenue bonds are estimated to average 7.5 percent.
- Bonds are to be repaid within 35 years of sale with maturities commencing in the year following the date of sale and with equal annual bond service for the principal repayment period.

### ***Payments on Projected Revenue Bonds***

*Payments on Projected Future Water System Revenue Bonds, Lines 27 and 28.* These lines include the amounts of the projected annual service for future water revenue bonds indicated on Line 25 of Table 29 for water system facilities. Assumptions concerning the service on these future bonds are the same as those included for lines 25 and 26.

### ***Total Payments***

*Total Payments of Bond Service, Lines 29 and 30.* The amounts included in these lines represent the total of interest payments indicated on lines 24, 26, and 28 and the total of principal payments indicated on lines 23, 25, and 27.

### ***Debt Service***

*Subtotal, Debt Service, Line 31.* The amount on this line is the total of lines 29 and 30.

## ***Water Fund Repayment***

*California Water Fund Repayment, Line 32.* The Burns-Porter Act requires that, after operation, maintenance, replacement, and bond service requirements have been satisfied, SWP revenues be transferred to the California Water Fund to reimburse the fund for monies expended for construction of the State Water Resources Development System.

In 1982 and 1983, the Department transferred a total of \$70 million toward the repayment of the California Water Fund. The legislature subsequently appropriated all these funds to the state's General Fund. Legislation enacted in 1989 provided for the orderly, scheduled reimbursement of the remaining balance owed to the California Water Fund over a period of ten years. A portion of this reimbursement is to be offset by the amounts owed to SWP by the state for costs allocated to recreation and fish and wildlife enhancement.

As of December 31, 1990, reimbursements to the California Water Fund totaled \$315 million. Of this total, approximately \$135 million was direct repayments and \$180 million was offsets for recreation and fish and wildlife enhancement expenditures to date. Future offsets are projected to total \$23 million. The remaining \$165 million balance will be repaid by SWP, according to the repayment schedule in the legislation, subject to the availability of monies for such purpose. The projected repayment schedule is indicated in Line 32.

### ***Total Operating Expenses and Debt Service***

*Total Operating Expenses and Debt Service, Line 33.* The amount in this line is the total of lines 20, 21, 22, 31, and 32.

### ***Current Operating Funds***

*Current Operating Funds, Line 34.* The amounts indicated in this line represent the funds available

for future payment of operation and maintenance costs and debt service and funds provided for drought contingencies.

The amount in Column 1 represents the December 31, 1990, cash balance for these funds in the Systems Revenue Account of the California Water Resources Development Bond Fund. Amounts in excess of those needed for operating costs and debt service are used for repaying the California Water Fund as indicated in Line 32 or for financing SWP construction expenditures as indicated in lines 35 and 36.

### ***Revenues Required for Current Construction***

*Revenues Required for Current Construction, Line 35.* Revenues not needed for operating costs, debt service, or repayment of the California Water Fund are available for financing SWP capital expenditures. Line 35 includes the amounts required annually for financing scheduled capital expenditures.

### ***Revenues Available for Future Construction***

*Revenues Available for Future Construction, Line 36.* As indicated in Line 36, some revenues in excess of expenses and repayment of the California Water Fund are available beyond present construction requirements.

Those funds would be available to fund a portion of future SWP facilities. The amount shown could be transferred to Line 35 if additional facilities scheduled for construction require funding.

### ***Capital Resource Revenues Used for Construction***

*Capital Resources Revenues Used for Construction, Line 37.* The amount in this line is the same as the amount in Line 30 of Table 29.

### ***Total Expenses***

*Total Project Expenses.* The amount in this line is equal to the sum of lines 33 through 37.

### ***Future Costs of Water Service***

Estimates of future water costs are useful to SWP contractors in short-range and long-range planning of water needs, operations, and budgets. Unit water charges included in Table 37, "Estimated Future Unit Water Charges," represent future costs of water by SWP service area. The unit rates in Table 37 include costs of existing and

future SWP facilities accounted for in tables 29 and 32.

The unit charges are based on the assumption that in 1991 and 2005, SWP will be able to deliver full contractors' requests for water. The unit water charges included in Table 37 are indicated both as unescalated 1990 dollars and as escalated rates reflecting assumed future inflation.

The Department's estimates of future capital expenditures include allowances for escalation of construction costs at 5 percent per year for 1991 through 2005. The escalation rates for future power sources vary, depending on the source of energy.

TABLE 32  
State Water Project Revenues and Expenses, June 30, 1991  
(Thousands of dollars)

Line No.	Line Item	Calendar Year																Total	Total
		1952-1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	1991-2005	1952-2005
Project Revenues																			
1.	Capital Resources Revenues	730,969	15,906	473	1,312	379	0	0	0	0	0	0	0	0	0	0	0	18,070	749,039
Water Contractor Payments:																			
2.	Transportation Capital	1,692,040	99,169	100,993	105,681	111,883	118,269	122,553	123,114	123,125	123,124	123,124	123,124	123,123	123,123	123,122	123,122	1,766,649	3,458,689
3.	Transportation Minimum	1,625,972	207,272	233,203	248,883	250,573	245,826	250,681	253,568	251,191	240,415	235,059	234,323	226,694	220,455	217,642	209,337	3,525,122	5,151,094
4.	Transportation Variable	691,448	86,602	141,728	155,797	176,475	175,259	200,862	223,833	226,509	229,618	241,736	243,246	246,832	251,596	260,186	283,504	3,143,783	3,835,231
5.	Delta Water Charge	645,305	73,265	83,874	92,141	93,364	94,554	95,737	96,844	97,970	98,567	99,204	99,714	100,210	100,523	100,839	101,150	1,427,956	2,073,261
6.	EB Enlargement Payments	41,115	14,051	29,876	32,548	42,156	45,929	45,966	46,006	46,028	46,061	46,094	46,138	46,167	46,197	46,240	46,266	625,723	666,838
7.	Water Revenue Bond Surcharge	27,521	16,351	22,211	31,777	41,730	51,610	58,166	61,079	61,104	61,130	61,152	61,132	61,159	61,169	61,184	61,180	772,134	799,655
8.	Subtotal Water Contractor Payments	4,723,401	496,710	611,885	666,827	716,181	731,447	773,965	804,444	805,927	798,915	806,369	807,677	804,185	803,063	809,213	824,559	11,261,367	15,984,768
9.	Revenue Bond Cover Adjustments	0	(32,996)	(22,637)	(27,854)	(32,010)	(37,643)	(42,169)	(44,728)	(45,639)	(45,645)	(45,659)	(45,666)	(45,679)	(45,689)	(45,712)	(45,725)	(605,451)	(605,451)
Other Revenues:																			
10.	Federal Payments for Project Operating Costs	78,250	8,275	9,493	9,577	9,204	9,212	9,217	9,218	9,218	9,218	9,218	9,218	9,218	9,218	9,218	9,218	137,940	216,190
11.	Appropriations for Operating Costs allocated to Recreation	16,657	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16,657
12.	Local Agency Payments Under Davis-Grunsky Loan Repayment Contracts	22,316	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	30,000	52,316
13.	Revenue Bond Proceeds	292,178	22,858	34,581	31,270	26,697	17,159	5,830	0	0	0	0	0	0	0	0	0	138,395	430,573
14.	Interest Earnings on Operating Revenues	332,887	8,101	8,749	7,610	7,705	7,810	7,920	8,035	8,155	8,285	8,420	8,565	8,720	8,885	9,055	9,240	125,255	458,142
15.	Payments Under Oroville-Thermalito Power Sale Contract	249,279	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	249,279
16.	Miscellaneous Revenues	156,388	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	156,388
17.	Subtotal Other Revenues	1,147,955	41,234	54,823	50,457	45,806	36,181	24,967	19,253	19,373	19,503	19,638	19,783	19,938	20,103	20,273	20,458	431,590	1,579,545
18.	Total Operating Revenues	5,871,356	504,948	644,071	689,430	729,777	729,985	756,763	778,969	779,661	772,773	780,348	781,794	778,444	777,477	783,774	799,292	11,087,506	16,958,862
19.	Total Operating Revenues and Capital Resources Revenues	6,602,325	520,854	644,544	690,742	730,156	729,985	756,763	778,969	779,661	772,773	780,348	781,794	778,444	777,477	783,774	799,292	11,105,576	17,707,901
Project Expenses																			
20.	Project Operation, Maintenance and Power Costs	2,290,484	269,269	344,278	367,551	383,779	378,493	412,190	439,227	437,998	430,671	437,233	434,039	430,305	429,299	434,231	451,456	6,080,019	8,370,503
21.	Deposits to Replacement Reserves	178,952	367	7,712	8,079	8,080	8,080	8,079	8,080	8,079	8,079	8,079	8,079	8,080	8,079	8,079	8,080	113,111	292,063
22.	Deposits to Special Reserves Under Revenue Bond Financing	372,679	13,819	3,195	33,017	37,401	28,992	15,562	8,331	7,433	7,456	6,966	7,466	7,472	7,497	7,491	7,486	199,584	572,263
Payments of Debt Service:																			
23.	Principal Repayments on Bonds Sold thru June 30, 1991	520,440	49,985	54,330	57,554	60,805	63,750	66,959	68,801	71,055	74,375	78,221	82,090	86,195	91,255	97,135	102,330	1,104,840	1,625,280
24.	Interest on Bonds Sold thru June 30, 1991	2,526,994	171,501	174,271	171,815	168,033	164,651	161,305	157,324	153,533	149,596	145,922	141,016	136,323	131,334	125,846	119,981	2,272,451	4,799,445
25.	Future East Branch Enlargement Bond Principal Repayments	0	0	0	575	955	1,135	1,225	1,320	1,415	1,520	1,635	1,760	1,890	2,030	2,185	2,345	19,990	19,990
26.	Future East Branch Enlargement Bond Interest Payments	0	0	3,338	8,625	11,169	11,735	11,650	11,558	11,459	11,353	11,239	11,117	10,985	10,843	10,691	10,527	146,289	146,289
27.	Future Water Bond Principal Repayments	0	0	0	1,135	2,415	3,790	4,885	5,530	5,945	6,395	6,870	7,390	7,945	8,545	9,185	9,870	79,900	79,900
28.	Future Water Bond Interest Payments	0	0	0	13,125	26,840	40,459	49,550	52,483	52,068	51,623	51,143	50,628	50,073	49,478	48,837	48,148	584,455	584,455
29.	Total Principal	520,440	49,985	54,330	59,264	64,175	68,675	73,069	75,651	78,415	82,290	86,726	91,240	96,030	101,830	108,505	114,545	1,204,730	1,725,170
30.	Total Interest	2,526,994	171,501	177,609	183,565	206,042	216,845	222,505	221,365	217,060	212,572	208,304	202,761	197,381	191,655	185,374	178,656	3,003,195	5,530,189
31.	Subtotal Debt Service	3,047,434	221,486	231,939	252,829	270,217	285,520	295,574	297,016	295,475	294,862	295,030	294,001	293,411	293,485	293,879	293,201	4,207,925	7,255,359
32.	California Water Fund Repayment	135,200	26,200	18,500	21,500	28,000	24,800	20,000	20,000	6,300	0	0	0	0	0	0	0	165,300	300,500
33.	Total Operating Expenses & Debt Service	6,024,749	531,141	605,624	682,976	727,477	725,885	751,405	772,654	755,285	741,068	747,308	743,585	739,268	738,360	743,680	760,223	10,765,939	16,790,688
34.	Current Operating Funds	16,437	(15,337)	100	300	100	1,900	3,158	4,115	12,827	0	0	0	0	0	0	0	7,163	23,600
35.	Revenues Required for Current Construction	35,900	2,200	2,200	2,200	2,200	2,200	2,200	2,200	11,549	11,403	11,844	4,572	4,572	4,572	4,572	4,572	73,056	108,956
36.	Revenues Available for Future Construction	0	0	0	0	0	0	0	0	0	20,302	21,196	33,637	34,604	34,545	35,522	34,497	214,303	214,303
37.	Capital Resources Revenues Used for Construction	625,239	2,850	36,620	5,266	379	0	0	0	0	0	0	0	0	0	0	0	45,115	570,354
38.	Total Project Expenses	6,602,325	520,654	644,544	690,742	730,156	729,985	756,763	778,969	779,661	772,773	780,348	781,794	778,444	777,477	783,774	799,292	11,105,576	17,707,901

TABLE 33  
Effect of Revenue Bond Proceeds on Project Interest Rate  
(Millions of dollars)

<i>Project</i>	<i>Revenue Bond Proceeds</i>					
	<i>Applied to Construction Costs</i>	<i>Less Portion of Proceeds Derived from Interest Earnings Prior to Delivery of Bonds</i>	<i>Plus Bond Discount and Financing Costs</i>	<i>Subtotal, Proceeds Included in Calculating Project Interest Rate</i>	<i>Principal Amount of Bonds</i>	<i>Percent Total Amount Included in Calculating Project Interest Rate</i>
Devil Canyon - Castaic Project Revenue Bonds	125.3	1.5	1.4	125.2	139.2	90
Pyramid Project Revenue Bonds (Series A)	71.2	0.5	1.1	71.8	95.8	75
Alamo Project Bond Anticipation Note	16.8	0.1	0.3	17.0	24.4	70
Small Hydro Project I Revenue Bonds (Series D)	25.4	0.2	1.5	26.7	37.5	71
Alamo Project Revenue Bonds (Series F)	38.9	0.3	0.7	39.3	50.0	79
Power Facilities Revenue Bonds (Series H) Facility						
Pyramid Project	5.0	0	0.1	5.1	5.1	100
Alamo Project	1.7	0	0	1.7	1.7	100
Small Hydro Project I	25.2 (a)	0.2	0.4	25.4	35.6	71

a) Amount is 71 percent of the proceeds deposited in escrow account to refund portion of Series D bonds (\$35.1 million) plus deposits to construction account (\$0.3 million).

TABLE 34  
Actual Bond Sales and Project Interest Rates, by Date of Sale

<i>Bond Sales</i>	<i>Date of Sale</i>	<i>Dollar-Years (a (\$1,000))</i>	<i>Interest Cost (\$1,000)</i>	<i>Interest Cost (b (Percent))</i>	<i>Project Interest Rate (c (Percent))</i>
\$ 50,000,000 Bond Anticipation Notes	11/21/63	26,944	531	1.971	1.971
\$100,000,000 Series A Water Bonds	2/18/64	3,402,000	119,750	3.520	3.508
\$ 50,000,000 Series B Water Bonds	5/05/64	1,726,000	60,986	3.533	3.516
\$100,000,000 Series C Water Bonds	10/07/64	3,452,000	123,764	3.585	3.544
\$100,000,000 Series D Water Bonds	2/16/65	3,497,900	122,403	3.499	3.531
\$100,000,000 Series E Water Bonds	11/23/65	3,497,900	130,029	3.717	3.573
\$100,000,000 Series F Water Bonds	6/08/66	3,497,900	137,359	3.927	3.638
\$100,000,000 Series G Water Bonds	11/22/66	3,497,900	143,788	4.111	3.711
\$100,000,000 Series H Water Bonds	3/21/67	3,497,900	129,261	3.695	3.709
\$100,000,000 Series J Water Bonds	7/18/67	3,497,900	143,199	4.094	3.754
\$100,000,000 Series K Water Bonds	11/14/67	3,497,900	163,887	4.685	3.853
\$150,000,000 Revenue Bonds, Oroville Division, Series A	4/03/68	5,228,700	270,289	5.169	
\$100,000,000 Series L Water Bonds	7/11/68	3,497,900	166,918	4.772	3.941
\$100,000,000 Series M Water Bonds	10/22/68	3,497,900	169,989	4.860	4.021
\$ 94,995,000 Revenue Bonds, Oroville Division, Series B	4/01/69	3,423,460	195,902	5.722	
\$ 46,761,000 Cumulative 1970 General Fund Borrowing, repaid 7/10/70	-	4,938	346	7.007	
\$200,000,000 Series N and P Bond Anticipation Notes	6/16/70	200,000	11,660	5.830	4.030
\$100,000,000 Series N Water Bonds	2/02/71	3,447,900	190,292	5.519	4.148
\$100,000,000 Series Q Bond Anticipation Notes	3/10/71	100,000	2,349	2.349	4.143
\$100,000,000 Series P Water Bonds	4/21/71	3,397,900	193,377	5.691	4.255
\$150,000,000 Series Q and R Water Bonds	11/09/71	5,171,850	265,734	5.138	4.342
\$ 40,000,000 Series S Water Bonds	3/28/72	1,399,160	76,509	5.468	4.371
\$139,165,000 Devil Canyon-Castaic Revenue Bonds(d)	8/08/72	4,776,204	258,839	5.419	4.457
\$ 10,000,000 Series T Water Bonds	3/20/73	185,265	9,491	5.123	4.459
\$ 10,000,000 Series U Water Bonds	1/13/76	158,750	8,731	5.500	4.462
\$ 10,000,000 Series V Water Bonds	11/15/77	158,750	7,573	4.770	4.462
\$ 95,800,000 Pyramid Hydroelectric Revenue Bonds(d)	10/23/79	2,260,072	172,495	7.632	4.584
\$150,000,000 Reid Gardner Project, Series A Bond Anticipation Notes	7/1/81	347,906	29,572	8.500	
\$ 75,600,000 Bottle Rock Project, Bond Anticipation Notes	12/1/81	264,600	25,137	9.500	
\$ 24,400,000 Alamo Project, Bond Anticipation Notes (d)	12/1/81	24,266	2,305	9.500	4.589
\$200,000,000 Reid Gardner Project, Series B Revenue Bonds	7/07/82	4,623,137	553,793	11.979	
\$125,000,000 Reid Gardner Project, Series C Revenue Bonds	11/16/82	2,720,045	255,744	9.402	
\$ 37,500,000 Small Hydro Project I, Series D Revenue Bonds(d)	11/16/82	837,769	84,587	10.097	4.666
\$ 37,500,000 South Geysers Project, Series D Revenue Bonds	11/16/82	930,325	90,021	9.676	
\$125,000,000 Bottle Rock Project, Series E Revenue Bonds	4/27/83	2,624,805	225,102	8.576	
\$ 50,000,000 Alamo Project, Series F Revenue Bonds(d)	4/27/83	1,190,763	100,836	8.468	4.727
\$ 25,000,000 South Geysers Project, Series F Revenue Bonds	4/27/83	608,550	52,578	8.640	
\$239,505,000 Reid Gardner Project, Series G Revenue Bonds	3/15/85	4,524,136	425,840	9.413	
\$206,690,000 Power Facilities Series H Revenue Bonds (d)	6/20/86	4,430,520	347,745	7.849	4.713
\$132,000,000 East Branch Enlargement, Series A Water System Revenue Bonds	7/15/86	3,427,165	254,915	7.438	
\$100,000,000 Series B Water System Revenue Bonds	5/05/87	2,564,012	194,817	7.598	
\$ 9,000,000 Series C Water System Revenue Bonds	12/01/87	324,000	31,995	9.875	
\$100,000,000 Series D Water System Revenue Bonds	6/14/88	2,640,510	201,253	7.622	
\$ 9,000,000 Series E Water System Revenue Bonds	12/16/88	324,000	31,995	9.875	
\$160,030,000 Series F Water System Revenue Bonds	3/15/89	2,779,838	189,261	6.808	
\$100,000,000 Series G Water System Revenue Bonds	3/06/90	2,434,175	172,277	7.077	
\$100,000,000 Series H Water System Revenue Bonds	1/10/91	2,459,172	168,857	6.866	
\$180,000,000 Series I Water System Revenue Bonds	6/01/91	4,366,680	294,090	6.735	
<b>Total</b>		<b>114,447,367</b>	<b>7,008,171</b>		
<b>Portion allocated to Project Interest Rate</b>		<b>63,621,853</b>	<b>2,998,367</b>		<b>4.713</b>

a) A unit equivalent to one dollar of principal amount outstanding for one year.

b) The total interest cost (without regard to premiums received) divided by the total dollar-years, expressed as a percent.

c) Determined by dividing cumulative interest costs by cumulative dollar-years, expressed as a percent. Excluding Oroville Field Division, Power Revenue Bonds for Off-Aqueduct Facilities, and Water System Revenue Bonds, which do not affect the Project Interest Rate.

d) These revenue bonds and revenue bond anticipation notes were sold at the following net interests costs. The amounts indicated (representing the sum of proceeds used for construction and the bond discount) were used in the calculations of the Project Interest Rate:

Devil Canyon-Castaic Revenue Bonds:	5.446 percent	\$126,893,000
Pyramid Hydroelectric Revenue Bonds:	7.680 percent	\$ 75,586,000
Alamo Bond Anticipation Notes:	10.036 percent	\$ 18,034,000
Small Hydro Project I, Series D Revenue Bonds:	10.275 percent	\$ 28,012,000
Alamo Project, Series F Revenue Bonds:	8.525 percent	\$ 40,114,000
Power Facilities, Series H Revenue Bonds:	7.926 percent	\$ 42,340,000



TABLE 35  
Operations, Maintenance, Power, and Replacement Costs, by Facility, Composition, and Purpose  
(Thousands of dollars)

Feature	Calendar Year																	Total
	1962-1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006-2035	
<b>Project Facility</b>																		
Feather River Facilities	218,617	(2,744)	(1,014)	(501)	(708)	(541)	(439)	(398)	(395)	(398)	(385)	(389)	(387)	(546)	(1,260)	(1,240)	(36,372)	170,900
North Bay Aqueduct	6,276	1,848	2,132	2,344	2,064	2,155	2,162	2,226	2,252	2,282	2,325	2,345	2,369	2,398	2,435	2,506	82,961	123,080
Suisun Marsh	1,323	795	862	926	949	906	836	832	832	832	832	1,368	1,368	1,368	1,368	1,368	41,048	57,813
South Bay Aqueduct	70,544	8,692	8,714	8,966	9,216	9,287	9,491	9,869	9,896	9,934	10,077	10,086	10,127	10,187	10,300	10,617	332,366	548,369
California Aqueduct:																		
Delta to Edmonston	973,161	123,124	153,453	165,946	174,052	174,297	188,300	198,646	198,119	200,088	204,400	205,135	206,804	209,256	212,538	222,366	7,175,808	10,985,493
Edmonston to Perris	691,483	65,834	122,046	135,050	145,259	144,076	156,652	167,633	173,893	169,001	180,183	181,627	181,690	182,993	189,976	202,681	6,705,040	9,795,117
West Branch	(4,416)	(478)	(10,685)	(18,940)	(16,763)	(15,687)	(19,861)	(14,055)	(18,305)	(17,802)	(17,804)	(17,543)	(17,895)	(17,400)	(17,075)	(16,323)	(471,277)	(712,309)
Coastal Branch	31,349	3,354	4,440	4,221	4,007	4,033	10,818	11,138	11,169	11,202	11,390	11,401	11,452	11,523	11,661	12,047	378,229	543,434
Off-Aqueduct Power Generating Facilities	377,727	62,622	59,858	64,380	66,304	60,304	64,304	63,304	60,366	55,222	45,766	44,382	39,012	33,641	28,270	19,606	(5,667)	1,139,401
Water Quality Monitoring (a)	85,916	10,111	15,558	16,503	10,599	10,724	10,848	10,815	10,815	10,815	10,815	5,854	5,854	5,828	5,828	5,828	174,824	407,535
Davis-Grunsky Act Program	2,020	247	256	226	232	232	232	232	232	232	232	232	232	232	232	232	6,939	12,472
Subtotal	2,454,000	273,405	355,620	379,121	395,211	389,786	423,343	450,242	448,874	441,408	447,831	444,498	440,626	439,480	444,273	450,688	14,383,899	23,071,305
Payments to/Credits from PG&E under Comprehensive Agreement	15,436	(3,769)	(3,630)	(3,491)	(3,352)	(3,213)	(3,074)	(2,935)	(2,797)	(2,658)	(2,519)	(2,380)	(2,241)	(2,102)	(1,963)	(152)	0	(24,840)
<b>Total OMP&amp;R Costs</b>	<b>2,469,436</b>	<b>269,636</b>	<b>351,990</b>	<b>375,630</b>	<b>391,859</b>	<b>386,573</b>	<b>420,269</b>	<b>447,307</b>	<b>446,077</b>	<b>438,750</b>	<b>445,312</b>	<b>442,118</b>	<b>438,385</b>	<b>437,378</b>	<b>442,310</b>	<b>450,536</b>	<b>14,383,899</b>	<b>23,046,465</b>
<b>Composition</b>																		
Salaries and Expenses of Headquarters Personnel(a)	417,153	49,279	59,562	63,729	56,783	56,783	56,783	56,783	56,783	56,783	56,783	51,822	51,822	51,603	51,603	51,822	1,547,850	2,793,726
Salaries and Expenses of Field Personnel	897,009	86,072	95,703	97,586	93,458	96,723	96,872	96,869	95,644	96,869	96,870	97,434	97,397	97,398	97,398	97,175	2,852,437	5,188,914
Pumping Power:																		
Used by Pumping Plants	999,142	132,480	221,522	235,536	275,601	279,380	310,645	342,928	342,585	339,753	356,874	359,198	360,276	364,655	376,365	400,676	13,301,773	18,999,389
Produced by Generation Plants	(319,824)	(57,870)	(88,493)	(89,403)	(104,150)	(108,153)	(114,132)	(118,514)	(115,375)	(116,090)	(117,333)	(117,209)	(116,753)	(116,688)	(118,234)	(118,463)	(3,578,638)	(5,515,322)
Payments to/Credits from PG&E under Comprehensive Agreement	15,436	(3,769)	(3,630)	(3,491)	(3,352)	(3,213)	(3,074)	(2,935)	(2,797)	(2,658)	(2,519)	(2,380)	(2,241)	(2,102)	(1,963)	(152)	0	(24,840)
Off-Aqueduct Power Generating Facilities	377,727	62,622	59,858	64,380	66,304	60,304	64,304	63,304	60,366	55,222	45,766	44,382	39,012	33,641	28,270	19,606	(5,667)	1,139,401
Oroville-Thermalito Insurance Premiums	7,693	766	783	792	792	792	792	792	792	792	792	792	792	792	792	792	23,760	43,298
Less: Portion of Costs Incurred During Construction	(103,852)	(311)	(1,027)	(1,578)	(1,557)	(4,123)	0	0	0	0	0	0	0	0	0	0	0	(112,548)
Subtotal	2,290,484	269,269	344,278	367,551	383,779	378,493	412,190	439,227	437,998	430,671	437,233	434,039	430,305	429,299	434,231	451,456	14,141,515	22,512,018
Deposits to Replacement Reserves	178,952	367	7,712	8,079	8,080	8,080	8,079	8,080	8,079	8,079	8,079	8,079	8,080	8,079	8,079	8,080	242,384	534,447
<b>Total OMP&amp;R Costs</b>	<b>2,469,436</b>	<b>269,636</b>	<b>351,990</b>	<b>375,630</b>	<b>391,859</b>	<b>386,573</b>	<b>420,269</b>	<b>447,307</b>	<b>446,077</b>	<b>438,750</b>	<b>445,312</b>	<b>442,118</b>	<b>438,385</b>	<b>437,378</b>	<b>442,310</b>	<b>450,536</b>	<b>14,383,899</b>	<b>23,046,465</b>
<b>Project Purpose</b>																		
Water Supply and Power Generation(a)	2,336,353	258,471	338,822	362,039	378,497	372,983	406,495	433,178	431,839	424,547	430,815	428,068	424,253	423,111	427,817	443,147	13,884,020	22,204,455
Payments to/Credits from PG&E under Comprehensive Agreement	15,436	(3,769)	(3,630)	(3,491)	(3,352)	(3,213)	(3,074)	(2,935)	(2,797)	(2,658)	(2,519)	(2,380)	(2,241)	(2,102)	(1,963)	(152)	0	(24,840)
Recreation and Fish and Wildlife Enhancement	40,776	5,790	6,627	6,853	6,909	6,989	7,029	7,242	7,212	7,039	7,192	6,606	6,549	6,544	6,630	6,713	204,959	347,658
Flood Control	1,507	153	220	220	225	226	226	228	228	228	230	230	230	231	232	234	7,122	11,971
Miscellaneous Purposes:																		
Federal Share, San Luis and Delta Facilities	72,410	8,570	9,493	9,577	9,204	9,212	9,217	9,218	9,218	9,218	9,218	9,218	9,218	9,218	9,218	9,218	279,538	487,183
Other (Davis-Grunsky, Drainage, City of Los Angeles)	2,954	421	458	432	376	376	376	376	376	376	376	376	376	376	376	376	11,281	20,038
<b>Total OMP&amp;R Costs</b>	<b>2,469,436</b>	<b>269,636</b>	<b>351,990</b>	<b>375,630</b>	<b>391,859</b>	<b>386,573</b>	<b>420,269</b>	<b>447,307</b>	<b>446,077</b>	<b>438,750</b>	<b>445,312</b>	<b>442,118</b>	<b>438,385</b>	<b>437,378</b>	<b>442,310</b>	<b>450,536</b>	<b>14,383,899</b>	<b>23,046,465</b>

a) Includes \$5,000,000 in 1992 and 1993 for purchase of supplemental water supplies.



TABLE 36  
Annual Debt Service on Bonds Sold Through June 30, 1991  
(Thousands of dollars)

Calendar Year	Series A Through V Water Bonds		Oroville (a Revenue Bonds		Devil Canyon-Castaic Project Revenue Bonds		Pyramid Project PFRB Series A and H (b		Reid Gardner Project PFRB Series B,C,G and H WSRB Series F (c	
	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest
1964	0	3,333	0	0	0	0	0	0	0	0
1965	0	11,114	0	0	0	0	0	0	0	0
1966	0	16,742	0	0	0	0	0	0	0	0
1967	0	26,912	0	0	0	0	0	0	0	0
1968	0	37,760	0	3,876	0	0	0	0	0	0
1969	0	47,461	0	10,448	0	0	0	0	0	0
1970	0	53,291	0	13,145	0	0	0	0	0	0
1971	0	63,035	0	13,145	0	0	0	0	0	0
1972	0	69,148	1,260	13,112	0	0	0	0	0	0
1973	1,200	69,348	1,330	13,042	0	7,708	0	0	0	0
1974	3,000	69,533	1,400	12,969	0	7,708	0	0	0	0
1975	5,000	69,366	1,475	12,893	0	7,708	0	0	0	0
1976	7,000	69,408	1,555	12,811	0	7,708	0	0	0	0
1977	10,200	69,323	1,635	12,727	0	7,708	0	0	0	0
1978	12,700	69,312	5,775	12,537	0	7,708	0	0	0	0
1979	13,650	68,690	11,585	12,275	0	7,708	0	0	0	0
1980	16,050	67,968	3,265	11,739	0	7,708	0	7,900	0	0
1981	18,050	67,109	4,885	11,444	0	7,708	0	7,292	0	0
1982	19,250	66,162	17,920	10,968	0	7,708	0	7,292	0	7,972
1983	20,520	65,148	21,110	10,147	900	7,708	0	7,292	0	35,719
1984	21,785	64,068	10,005	9,013	955	7,647	640	7,292	0	35,719
1985	22,555	63,932	12,700	8,628	1,010	7,583	675	7,238	9,425	27,209
1986	23,830	61,742	11,435	7,859	1,070	7,515	715	7,377	3,805	32,882
1987	25,495	60,492	11,715	7,188	1,135	7,442	790	7,513	4,860	32,606
1988	26,770	59,165	6,685	6,664	1,205	7,366	830	7,447	5,065	32,295
1989	28,145	57,825	33,705	5,513	1,275	7,284	875	7,378	7,820	27,557
1990	29,385	56,473	10,385	4,301	1,355	7,198	930	7,304	6,675	29,782
1991	30,365	55,070	3,335	3,922	1,435	7,107	980	7,227	7,170	29,302
1992	31,295	53,640	3,510	3,744	1,520	7,010	1,040	7,145	7,745	28,761
1993	32,940	52,183	3,695	4,118	1,610	6,907	1,095	7,074	8,340	28,160
1994	34,525	50,660	3,885	3,360	1,705	6,799	1,165	7,000	9,000	27,496
1995	35,660	49,073	4,085	3,153	1,810	6,684	1,235	6,919	9,665	26,817
1996	36,900	47,436	4,300	3,177	1,920	6,561	1,305	6,835	10,405	26,069
1997	36,595	45,818	4,525	2,705	2,035	6,432	1,385	6,743	11,220	25,248
1998	36,675	44,226	4,760	2,463	2,155	6,295	1,470	6,646	11,985	24,459
1999	37,600	42,655	5,005	2,203	2,285	6,160	1,560	6,542	12,840	23,607
2000	38,890	41,033	5,280	2,411	2,420	6,040	1,655	6,431	13,735	22,685
2001	39,980	39,351	5,565	1,632	2,565	5,912	1,760	6,311	14,710	21,690
2002	41,120	37,620	5,865	1,323	2,720	5,773	1,870	6,183	15,760	20,614
2003	42,970	35,835	6,180	996	2,885	5,626	1,995	6,047	16,960	19,451
2004	45,160	33,957	6,520	652	3,055	5,470	2,120	5,900	18,405	17,976
2005	46,450	31,995	6,870	289	3,240	5,305	2,255	5,744	19,960	16,374
2006	47,740	29,971	1,790	51	3,435	5,130	2,405	5,580	21,720	14,631
2007	49,230	27,883	0	0	3,640	4,945	2,570	5,405	23,570	12,732
2008	51,220	25,727	0	0	3,860	4,749	2,740	5,218	25,600	10,649
2009	53,560	23,478	0	0	4,090	4,540	2,925	5,018	27,480	8,700
2010	55,250	21,134	0	0	4,335	4,319	3,120	4,804	29,490	6,633
2011	56,740	18,717	0	0	4,595	4,085	3,330	4,563	31,655	4,416
2012	58,530	16,216	0	0	4,875	3,837	3,555	4,304	33,995	2,290
2013	60,370	13,676	0	0	5,165	3,574	3,795	4,028	0	0
2014	57,900	11,244	0	0	5,475	3,303	4,055	3,734	0	0
2015	53,690	8,838	0	0	5,805	3,015	4,325	3,418	0	0
2016	46,130	6,626	0	0	6,150	2,710	4,620	3,083	0	0
2017	38,060	4,614	0	0	6,520	2,388	4,935	2,724	0	0
2018	25,350	2,980	0	0	6,910	2,045	5,265	2,340	0	0
2019	16,890	1,778	0	0	7,325	1,682	5,625	1,932	0	0
2020	17,320	934	0	0	7,765	1,298	6,005	1,495	0	0
2021	8,510	301	0	0	8,230	890	6,410	1,029	0	0
2022	1,800	48	0	0	8,725	458	6,845	532	0	0
2023	0	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0	0
Total	1,570,000	2,378,577	244,995	272,643	139,165	283,872	100,870	239,279	419,060	680,501

a) Principal and interest schedule adjusted to reflect early redemption of bonds.

b) Power Facilities Revenue Bonds (PFRB).

c) Water System Revenue Bonds (WSRB).

TABLE 36  
Annual Debt Service on Bonds Sold Through June 30, 1991 (Continued)  
(Thousands of dollars)

Calendar Year	South Geysers Project PFRB Series D,F and H WSRB Series D & E		Small Hydro Project PFRB Series D and H		Bottle Rock Project PFRB Series E WSRB Series D & E		Alamo Project PFRB Series F and H		Subtotal	
	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest
1964	0	0	0	0	0	0	0	0	0	3,333
1965	0	0	0	0	0	0	0	0	0	11,114
1966	0	0	0	0	0	0	0	0	0	16,742
1967	0	0	0	0	0	0	0	0	0	26,912
1968	0	0	0	0	0	0	0	0	0	41,636
1969	0	0	0	0	0	0	0	0	0	57,909
1970	0	0	0	0	0	0	0	0	0	66,436
1971	0	0	0	0	0	0	0	0	0	76,180
1972	0	0	0	0	0	0	0	0	1,260	82,260
1973	0	0	0	0	0	0	0	0	2,530	90,098
1974	0	0	0	0	0	0	0	0	4,400	90,210
1975	0	0	0	0	0	0	0	0	6,475	89,967
1976	0	0	0	0	0	0	0	0	8,555	89,927
1977	0	0	0	0	0	0	0	0	11,835	89,758
1978	0	0	0	0	0	0	0	0	18,475	89,557
1979	0	0	0	0	0	0	0	0	25,235	88,673
1980	0	0	0	0	0	0	0	0	19,315	95,315
1981	0	0	0	0	0	0	0	0	22,935	93,553
1982	0	0	0	0	0	0	0	0	37,170	100,102
1983	0	4,777	0	3,727	0	6,017	0	2,449	42,530	142,984
1984	0	5,646	0	3,727	0	10,315	0	4,198	33,385	147,625
1985	0	5,646	0	3,727	0	10,315	0	4,198	46,365	138,476
1986	0	5,516	0	3,537	1,240	10,315	0	4,264	42,095	141,007
1987	0	5,385	0	3,348	1,305	10,253	265	4,329	45,565	138,556
1988	580	5,519	345	3,348	1,390	10,849	280	4,314	43,150	136,967
1989	709	5,646	365	3,328	1,566	11,592	295	4,299	74,755	130,422
1990	760	5,596	405	3,304	1,678	11,491	320	4,279	51,893	129,728
1991	818	5,538	430	3,277	1,791	11,376	335	4,257	46,659	127,076
1992	884	5,476	435	3,246	1,925	11,249	365	4,233	48,719	124,505
1993	956	5,405	470	3,214	2,069	11,108	390	4,206	51,565	122,376
1994	1,032	5,328	455	3,178	2,225	10,953	420	4,177	54,412	118,951
1995	1,121	5,241	490	3,142	2,396	10,783	450	4,144	56,912	115,957
1996	1,213	5,146	530	3,102	2,588	10,596	490	4,108	59,651	113,031
1997	1,328	5,042	560	3,059	2,801	10,392	530	4,070	60,977	109,510
1998	1,438	4,927	605	3,012	3,031	10,167	565	4,028	62,684	106,223
1999	1,562	4,801	655	2,961	3,281	9,922	620	3,981	65,408	102,831
2000	1,705	4,661	695	2,905	3,562	9,652	675	3,929	68,617	99,746
2001	1,858	4,509	765	2,844	3,865	9,360	725	3,874	71,793	95,483
2002	2,028	4,340	800	2,777	4,205	9,039	790	3,814	75,158	91,483
2003	2,222	4,154	790	2,705	4,565	8,688	860	3,747	79,427	87,249
2004	2,386	3,993	885	2,650	4,978	8,303	940	3,674	84,449	82,575
2005	2,560	3,820	970	2,589	5,411	7,884	1,020	3,594	88,736	77,594
2006	2,756	3,633	1,010	2,523	5,897	7,427	1,110	3,509	87,863	72,455
2007	2,957	3,431	1,085	2,455	6,425	6,930	1,210	3,414	90,687	67,196
2008	3,213	3,190	1,100	2,368	6,996	6,388	1,320	3,311	96,049	61,600
2009	3,470	2,927	1,120	2,280	7,629	5,798	1,435	3,200	101,709	55,940
2010	3,767	2,644	1,110	2,190	8,310	5,154	1,570	3,078	106,952	49,956
2011	4,085	2,336	1,110	2,102	9,063	4,451	1,705	2,945	112,283	43,615
2012	4,418	2,003	1,115	2,013	9,884	3,686	1,865	2,800	118,237	37,149
2013	4,797	1,642	1,740	1,924	10,779	2,850	2,035	2,641	88,681	30,335
2014	5,201	1,251	1,830	1,784	11,762	1,938	2,220	2,469	88,443	25,723
2015	5,568	825	1,925	1,638	705	945	2,420	2,281	74,438	20,959
2016	2,394	370	2,145	1,484	761	890	2,645	2,075	64,845	17,238
2017	166	168	2,295	1,312	822	831	2,885	1,851	55,683	13,888
2018	179	155	2,455	1,129	888	768	3,150	1,606	44,197	11,023
2019	193	142	2,615	932	960	700	3,440	1,339	37,048	8,505
2020	209	127	2,800	723	1,036	626	3,755	1,047	38,890	6,250
2021	226	111	2,975	499	1,119	546	4,105	728	31,575	4,104
2022	244	93	3,265	261	1,207	460	4,480	380	26,566	2,232
2023	263	74	0	0	1,304	367	0	0	1,567	441
2024	608	54	0	0	3,013	267	0	0	3,621	321
2025	0	0	0	0	0	0	0	0	0	0
Total	69,872	141,288	42,345	100,324	144,435	281,643	51,685	130,840	2,782,427	4,508,966

TABLE 36  
Annual Debt Service on Bonds Sold Through June 30, 1991 (Continued)  
(Thousands of dollars)

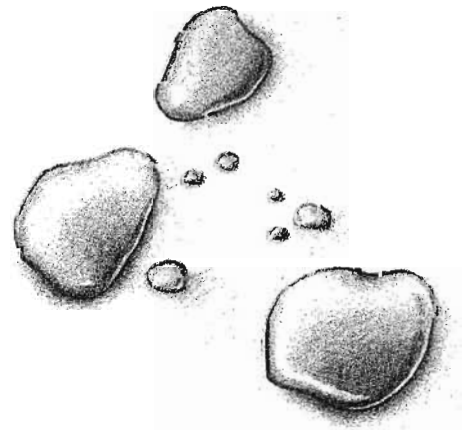
Calendar Year	East Branch Enlargement WSRB Series A,D,E,H & I		Water System Facilities WSRB Series B,C,D,E,G,H & I		Subtotal		Grand Total	
	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest
1964	0	0	0	0	0	0	0	3,333
1965	0	0	0	0	0	0	0	11,114
1966	0	0	0	0	0	0	0	16,742
1967	0	0	0	0	0	0	0	26,912
1968	0	0	0	0	0	0	0	41,636
1969	0	0	0	0	0	0	0	57,909
1970	0	0	0	0	0	0	0	66,436
1971	0	0	0	0	0	0	0	76,180
1972	0	0	0	0	0	0	1,260	82,260
1973	0	0	0	0	0	0	2,530	90,098
1974	0	0	0	0	0	0	4,400	90,210
1975	0	0	0	0	0	0	6,475	89,967
1976	0	0	0	0	0	0	8,555	89,927
1977	0	0	0	0	0	0	11,835	89,758
1978	0	0	0	0	0	0	18,475	89,557
1979	0	0	0	0	0	0	25,235	88,673
1980	0	0	0	0	0	0	19,315	95,315
1981	0	0	0	0	0	0	22,935	93,553
1982	0	0	0	0	0	0	37,170	100,102
1983	0	0	0	0	0	0	42,530	142,984
1984	0	0	0	0	0	0	33,385	147,625
1985	0	0	0	0	0	0	46,365	138,476
1986	0	4,021	0	0	0	4,021	42,095	145,028
1987	0	9,651	0	4,952	0	14,603	45,565	153,159
1988	995	9,875	710	11,037	1,705	20,912	44,855	157,879
1989	1,077	10,104	1,148	14,370	2,225	24,474	76,980	154,896
1990	1,134	10,048	1,227	19,556	2,361	29,604	54,254	159,332
1991	1,197	16,834	2,129	27,591	3,326	44,425	49,985	171,501
1992	2,505	21,052	3,105	28,716	5,610	49,768	54,329	174,273
1993	2,676	20,906	3,313	28,533	5,989	49,439	57,554	171,815
1994	2,853	20,748	3,539	28,334	6,392	49,082	60,804	168,033
1995	3,050	20,578	3,788	28,117	6,838	48,695	63,750	164,652
1996	3,260	20,393	4,048	27,882	7,308	48,275	66,959	161,306
1997	3,490	20,191	4,333	27,624	7,823	47,815	68,800	157,325
1998	3,736	19,968	4,635	27,344	8,371	47,312	71,055	153,535
1999	4,005	19,725	4,963	27,039	8,968	46,764	74,376	149,595
2000	4,290	19,465	5,313	26,709	9,603	46,174	78,220	145,920
2001	4,605	19,183	5,692	26,350	10,297	45,533	82,090	141,016
2002	4,935	18,880	6,103	25,962	11,038	44,842	86,196	136,325
2003	5,293	18,547	6,536	25,538	11,829	44,085	91,256	131,334
2004	5,682	18,189	7,005	25,081	12,687	43,270	97,136	125,845
2005	6,094	17,803	7,499	24,586	13,593	42,389	102,329	119,983
2006	6,542	17,384	8,040	24,054	14,582	41,438	102,445	113,893
2007	7,024	16,929	8,633	23,481	15,657	40,410	106,344	107,606
2008	7,540	16,436	9,252	22,865	16,792	39,301	112,841	100,901
2009	8,102	15,909	9,921	22,204	18,023	38,113	119,732	94,053
2010	8,701	15,340	10,643	21,492	19,344	36,832	126,296	86,788
2011	9,340	14,730	11,412	20,726	20,752	35,456	133,035	79,071
2012	10,029	14,075	12,248	19,900	22,277	33,975	140,514	71,124
2013	10,768	13,366	13,130	19,014	23,898	32,380	112,579	62,715
2014	11,566	12,605	14,085	18,064	25,651	30,669	114,094	56,392
2015	12,418	11,789	15,115	17,041	27,533	28,830	101,971	49,789
2016	13,335	10,910	16,210	15,945	29,545	26,855	94,390	44,093
2017	14,318	9,967	17,389	14,759	31,707	24,726	87,390	38,614
2018	15,383	8,956	18,650	13,484	34,033	22,440	78,230	33,463
2019	16,527	7,868	20,010	12,119	36,537	19,987	73,585	28,492
2020	17,759	6,699	21,466	10,653	39,225	17,352	78,115	23,602
2021	19,075	5,415	23,031	9,077	42,106	14,492	73,681	18,596
2022	20,496	4,037	24,703	7,384	45,199	11,421	71,765	13,653
2023	11,298	2,555	35,500	5,568	46,798	8,123	48,365	8,564
2024	12,662	1,766	27,502	2,734	40,164	4,500	43,785	4,821
2025	12,497	868	8,363	578	20,860	1,446	20,860	1,446
Total	306,257	543,765	400,389	756,462	706,646	1,300,227	3,489,073	5,809,193

TABLE 37  
**Estimated Future Unit Water Charges**  
(Dollars per acre-foot)

<i>Service Area</i>	<i>1992</i>		<i>2000</i>	
	<i>Unescalated</i>	<i>Escalated</i>	<i>Unescalated</i>	<i>Escalated</i>
<b>Upper Feather River</b>				
Capital, Operations, Maintenance, and Replacement	\$ 61	\$ 61	\$ 49	\$ 58
<b>North Bay</b>				
Capital, Operations, Maintenance, and Replacement	239	239	150	165
Power	16	16	17	20
<b>Total</b>	<b>255</b>	<b>255</b>	<b>167</b>	<b>185</b>
<b>South Bay</b>				
Capital, Operations, Maintenance, and Replacement	70	70	67	80
Power	36	36	45	54
<b>Total</b>	<b>106</b>	<b>106</b>	<b>112</b>	<b>134</b>
<b>Coastal</b>				
Capital, Operations, Maintenance, and Replacement	1,248	1,251	350	386
Power	89	89	95	113
<b>Total</b>	<b>1,337</b>	<b>1,340</b>	<b>445</b>	<b>499</b>
<b>San Joaquin</b>				
Capital, Operations, Maintenance, and Replacement	43	44	44	52
Power	18	18	21	26
<b>Total</b>	<b>61</b>	<b>62</b>	<b>65</b>	<b>78</b>
<b>Southern California</b>				
Capital, Operations, Maintenance, and Replacement	117	117	105	123
Power	97	97	127	152
<b>Total</b>	<b>\$ 214</b>	<b>\$ 214</b>	<b>\$ 232</b>	<b>\$ 275</b>

Appendix B

*Data and Computations Used in  
Determining 1992 Water Charges*





# Appendix B Contents

	<i>Page</i>
Types of Water Charges .....	189
Delta Water Charge .....	192
Transportation Charge .....	192
Composition and Timing of Water Charges .....	192
Bases for Allocating Reimbursable Costs Among Contractors .....	194
Capital and Minimum OMP&R Costs .....	194
Variable OMP&R Costs .....	196
Water Conveyance .....	196
Bases for Reimbursable Costs .....	198
Capital Costs .....	198
Annual Operating Costs .....	199
Project Water Charges .....	200
Transportation Charges .....	200
Delta Water Charges .....	202
Total Water Charges .....	203
Equivalent Total Water Charges .....	203
Equivalent Water Costs by Reach .....	203
East Branch Enlargement Facility Charges .....	203
Surplus and Other Water Services .....	204
Wheeling Services in the California Aqueduct .....	204
Surplus and Unscheduled Water Administrative Charges .....	206

## List of Tables

<i>Table</i>	<i>Page</i>
B-1 & B-2 Proportionate Use of Each Aqueduct Reach .....	208
B-3 Power Costs and Credits and Annual Replacement Deposits for Each Aqueduct	
Pumping and Power Recovery Plant .....	264
B-4 Annual Entitlements to Project Water .....	266
B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor .....	270
B-5B Annual Water Quantities Delivered to Each Contractor .....	278
B-6 Annual Water Quantities Conveyed Through Each Pumping and Power Recovery	
Plant of Project Transportation Facilities .....	282
B-7 Reconciliation of Capital Costs Allocated to Water Supply and Power Generation for	
Years 1952 Through 2035 .....	292



B-8	Capital Costs of Requested Delivery Structures to Be Built by State .....	293
B-9	Capital Costs of Requested Excess Peaking Capacity .....	294
B-10	Capital Costs of Each Aqueduct Reach to Be Reimbursed Through Capital Cost Component of Transportation Charge .....	296
B-11	Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed Through Minimum OMP&R Component of Transportation Charge .....	304
B-12	Variable OMP&R Costs to Be Reimbursed Through Variable OMP&R Component of Transportation Charge .....	312
B-13	Capital and Operating Costs of Project Conservation Facilities to Be Reimbursed Through Delta Water Charge .....	315
B-14	Capital Costs of Transportation Facilities Allocated to Each Contractor .....	316
B-15	Capital Cost Component of Transportation Charge for Each Contractor .....	320
B-16A	Minimum OMP&R Component of Transportation Charge for Each Contractor .....	324
B-16B	Minimum OMP&R Component of Transportation Charge for Each Contractor for Off-Aqueduct Power Facilities .....	328
B-17	Unit Variable OMP&R Component of Transportation Charge .....	332
B-18	Variable OMP&R Component of Transportation Charge for Each Contractor .....	336
B-19	Total Transportation Charge for Each Contractor .....	340
B-20A	Calculation of Delta Water Rates .....	344
B-20B	Delta Water Rates by Facility .....	345
B-21	Total Delta Water Charge for Each Contractor .....	346
B-22	Total Water System Revenue Bond Surcharge for Each Contractor .....	350
B-23	Total Transportation and Delta Water Charge for Each Contractor .....	354
B-24	Equivalent Unit Charge for Water Supply for Each Contractor .....	358
B-25	Equivalent Unit Transportation Costs of Water Delivered from or Through Each Aqueduct Reach .....	359
B-26	Capital Costs of Each Aqueduct Reach to Be Reimbursed Through Capital Cost Component of East Branch Enlargement Transportation Charge .....	360
B-27	Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed Through Minimum OMP&R Component of East Branch Enlargement Transportation Charge .....	362
B-28	Capital Costs of East Branch Enlargement Transportation Facilities Allocated to Each Contractor .....	364
B-29	Capital Cost Component of East Branch Enlargement Facilities Transportation Charge for Each Contractor .....	365
B-30	Minimum OMP&R Component of East Branch Enlargement Facilities Transportation Charge for Each Contractor .....	366
B-31	Total East Branch Enlargement Facilities Transportation Charge for Each Contractor .....	367
B-32	Annual Surplus and Unscheduled Water Deliveries .....	368
B-33	Power Costs for Pumping Surplus Water .....	369
B-34	Power, Replacement, and Administrative Charges for Surplus Water Delivery .....	370



## List of Figures

<i>Figure</i>		<i>Page</i>
B-1	Relationships of data used to substantiate statements of charges, by table numbers and titles	190
B-2	Relationships of data used to substantiate East Branch Enlargement charges, by table and figure numbers and titles .....	191
B-3	Composition of Delta Water Charge and Transportation Charge .....	193
B-4	Repayment reaches and descriptions .....	195
B-5	Cost allocation factors .....	198
B-6	Criteria for amortizing capital costs of transportation facilities .....	200
B-7	Determination of factors for distributing capital and minimum OMP&R costs of East Branch Enlargement facilities among participating contractors .....	205



## Appendix B

# Data and Computations Used in Determining 1992 Water Charges

THE DEPARTMENT OF WATER RESOURCES annually furnishes statements of charges to the 29 long-term State Water Project (SWP) water supply contractors. The following description of those statements is contained in Article 29(e) of *Standard Provisions for Water Supply Contract*, approved August 3, 1962.

*All such statements shall be accompanied by the latest revised copies of the document amendatory to Article 22 and of Tables B, C, D, E, F, and G of this contract, together with such other data and computations used by the State in determining the amounts of the above charges as the State deems appropriate.*

To comply with Article 29(e), the Department annually performs a comprehensive review and redetermination of all water supply and financial aspects of SWP for the entire project repayment period. This annual redetermination is performed in accordance with Article 22(f) and Article 28 of the water contracts. Article 22(f) concerns the Delta Water Rate per acre-foot of future entitlement; Article 28 concerns the annual transportation charges for the entire project repayment period.

Appendix B includes data used to document the redetermination of water charges to be paid by contractors during calendar year 1992. The information is based on established data about SWP, both known and projected, as of June 30, 1991.

The computational procedures and interrelationships between tabulations in this appendix are outlined in Figure B-1 and Figure B-2, which may be found on the next two pages. All B-tables referenced in Figures B-1 and B-2 are included at the end of this appendix.

Appendix B also includes information about payments made by contractors according to provisions contained in Article 21, amended, of the standard provisions for surplus water deliveries from SWP.

### *Types of Water Charges*

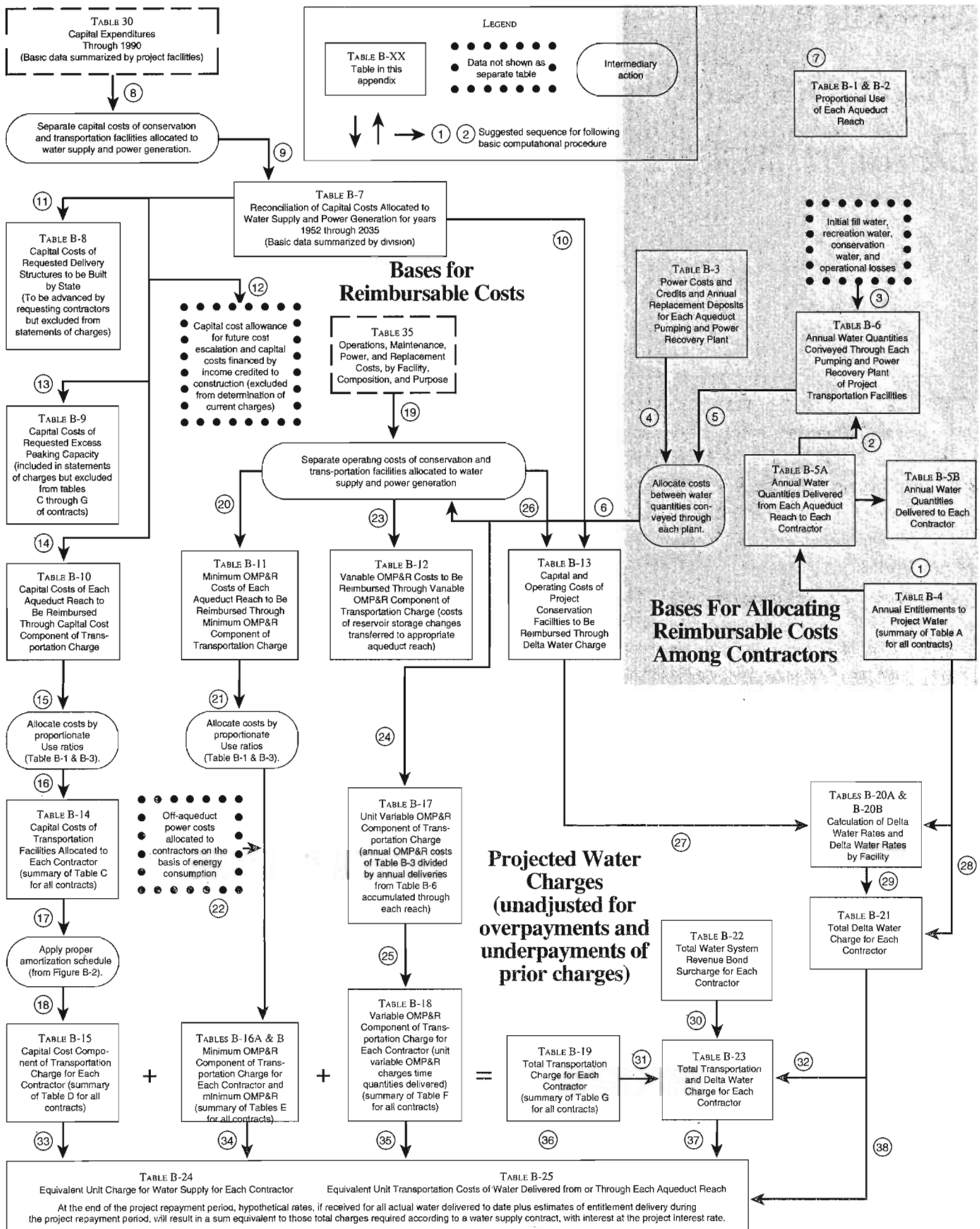
Costs of SWP facilities necessary for either the conservation and development of water supply or the conveyance of such supply to SWP service areas are included in charges to water contractors. According to information included in *Standard Provisions for Water Supply Contract*, these facilities are classified as project conservation facilities and project transportation facilities. The names of the main facilities in each classification follow.

#### *Project Conservation Facilities*

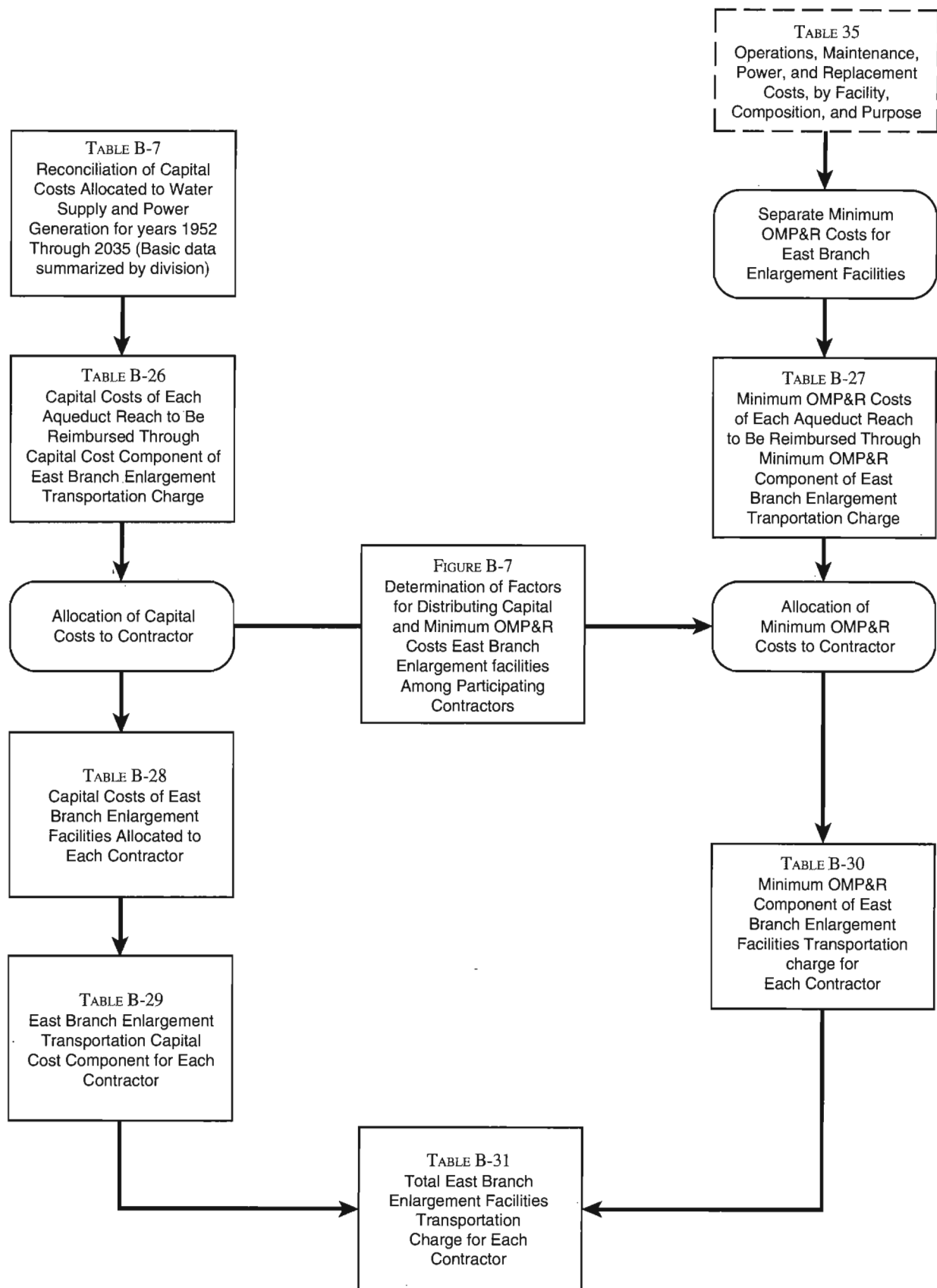
Frenchman Dam and Lake  
Grizzly Valley Dam and Lake Davis  
Antelope Dam and Lake  
Oroville Dam and Lake Oroville  
Oroville Power facilities  
Delta facilities  
A portion of the Governor Edmund G. Brown California Aqueduct from the Delta to Dos Amigos Pumping Plant  
B. F. Sisk San Luis Dam, San Luis Reservoir, and William R. Gianelli Pumping-Generating Plant

#### *Project Transportation Facilities*

Grizzly Valley Pipeline  
North Bay Aqueduct



**Fig. B-1. Relationships of data used to substantiate statements of charges, by table numbers and titles**



**Fig. B-2. Relationships of data used to substantiate East Branch Enlargement charges, by table and figure numbers and titles**

South Bay Aqueduct, including Del Valle Dam and Lake Del Valle

Remainder of the California Aqueduct from the Delta to Dos Amigos Pumping Plant and all facilities south, including dams and lakes in southern California

Off-Aqueduct power facilities (Reid Gardner Unit No. 4, Bottle Rock Powerplant, and South Geysers Powerplant)

The standard provisions provide for two basic annual charges for project water:

1. Delta Water Charge, which will be paid by all contractors and result in a return of all reimbursable costs of the project conservation facilities to the state
2. Transportation Charge, in addition to the Delta Water Charge, which will be paid by those contractors served by the project's transportation facilities and result in the return of all reimbursable costs of those facilities to the state

### *Delta Water Charge*

The Delta Water Charge is a unit charge applied to each acre-foot of SWP water the contractors are entitled to receive according to their contracts. The unit charge, if applied to each acre-foot of all such entitlements for the remainder of the project repayment period, is calculated to result in repayment of all outstanding reimbursable costs of the project conservation facilities, with appropriate interest, by the end of the repayment period (2035).

### *Transportation Charge*

The Transportation Charge is a charge for use of facilities to transport water to the vicinity of each contractor's turnout. Generally, the annual charge represents each contractor's proportionate share of the reimbursable capital costs and operating costs of the project's transportation facilities.

Each contractor's allocated share of those reimbursable capital costs is amortized for repayment to the state; and certain variations are allowed in the amortization methods. Essentially, the contractors' shares of reimbursable operating costs are repaid in the year such costs are incurred by the state.

The East Branch Enlargement Transportation Charge will be paid by seven southern California contractors participating in the enlargement. San Bernardino Valley

Municipal Water District elected to advance funds to pay the district's allocated capital costs for the East Branch enlargement.

The remaining contractors will pay an allocated share of the debt service on the revenue bonds sold to finance the enlargement. Each contractor also will pay an allocated share of the minimum OMP&R costs of the East Branch enlargement.

## *Composition and Timing of Water Charges*

As included in Figure B-3, on the next page, the Delta Water Charge and the Transportation Charge consist of the following three components:

1. Conservation and transportation capital cost components, which will result in a return to the state of all reimbursable capital costs
2. Conservation and transportation minimum OMP&R (operations, maintenance, power and replacement) components, which are designed to return to the state all reimbursable operating costs that do not depend on quantities of water actually delivered to the contractors
3. A transportation variable OMP&R component, which is designed to return to the state all reimbursable operating costs that depend on and vary with quantities of water actually delivered to the contractors.

Article 28 of the standard provisions of the water supply contracts provides that transportation charges be redetermined each year. The tables in Appendix B include the numerical data used in this redetermination. Transportation charges for prior years through 1990 included in those tables do not equal those amounts actually paid by contractors.

As provided under the Water System Revenue Bond Amendment to the water supply contracts, differences between actual payments and amounts computed in this redetermination are accumulated with interest and amortized during the remaining years of the contract repayment period. All computations for adjustments are included in the attachments accompanying each contractor's statement of charges and are reflected in revised copies of Table C through Table G of the contract, which are also furnished to each long-term water supply contractor in the annual statement of charges.

<b>DELTA WATER CHARGE</b>	<b>CAPITAL COST COMPONENT</b>	<ol style="list-style-type: none"> <li>1. Planning, design, right of way, and construction costs of conservation facilities</li> <li>2. O&amp;M costs for newly constructed conservation facilities prior to initial operation</li> <li>3. Activation costs for newly constructed conservation facilities</li> <li>4. Power costs allocated to initial filling of San Luis Reservoir</li> <li>5. Capitalized O&amp;M costs (major repair work, etc.) for conservation facilities</li> <li>7. Program costs (portion) to mitigate impacts on current Delta fishery population due to SWP pumping prior to 1986 (DWR-DFG Agreement)</li> </ol>
	<b>MINIMUM OMP&amp;R COMPONENT</b>	<ol style="list-style-type: none"> <li>1. Direct O&amp;M costs of conservation facilities <ol style="list-style-type: none"> <li>a. Headquarters and field divisions (portion)-</li> <li>b. Insurance and FERC costs (portion)</li> </ol> </li> <li>2. General O&amp;M costs allocated to conservation facilities <ol style="list-style-type: none"> <li>a. Contractor Accounting Office (portion)</li> <li>b. Financial and contract administration (portion)</li> <li>c. Water rights</li> <li>d. Power planning for SWP facilities (portion)</li> </ol> </li> <li>3. Replacement deposits for SWP control centers (portion)</li> <li>4. Credits for a portion of Hyatt-Thermalito power generation</li> <li>5. Power costs and credits related to pumping water to San Luis Reservoir for project operations (storage changes)</li> <li>6. Value of power used and generated by Gianelli Pumping-Generating Plant</li> <li>7. Program costs (portion) to offset annual fish losses resulting from pumping at Banks Pumping Plant (DWR-DFG Agreement)</li> </ol>
<b>TRANSPORTATION CHARGE</b>	<b>CAPITAL COST COMPONENT</b>	<ol style="list-style-type: none"> <li>1. Planning, design, right of way, and construction costs of transportation facilities</li> <li>2. O&amp;M costs for newly constructed transportation facilities prior to initial operation</li> <li>3. Activation costs for newly constructed transportation facilities</li> <li>4. Power costs allocated to initial filling of southern California reservoirs</li> <li>5. Capitalized O&amp;M costs (major repair work, etc.) for transportation facilities</li> <li>6. Program costs (portion) to mitigate impacts on current Delta fishery population due to SWP pumping prior to 1986 (DWR-DFG Agreement)</li> </ol>
	<b>MINIMUM OMP&amp;R COMPONENT</b>	<ol style="list-style-type: none"> <li>1. Direct O&amp;M costs of transportation facilities <ol style="list-style-type: none"> <li>a. Headquarters and field divisions (portion)</li> <li>b. Insurance and FERC costs (portion)</li> </ol> </li> <li>2. General O&amp;M costs related to transportation facilities <ol style="list-style-type: none"> <li>a. Contractor Accounting Office (portion)</li> <li>b. Financial and contract administration (portion)</li> <li>c. Power planning for SWP facilities (portion)</li> </ol> </li> <li>3. Power costs and credits related to pumping water to southern California reservoirs for project operations (storage change)</li> <li>4. Power costs for pumping water to replenish losses from transportation facilities</li> <li>5. Other power costs <ol style="list-style-type: none"> <li>a. Station service at transportation facility power and pumping plants</li> <li>b. Transmission service costs related to "backbone" transmission facilities</li> </ol> </li> <li>6. Replacement deposits for SWP control centers (portion)</li> <li>7. Off-aqueduct power facility costs - bond service, bond cover costs (25% of bond service), bond reserves, transmission costs to provide service to "backbone," fuel costs taxes, and O&amp;M - less power sales allocated to off-aqueduct power facilities</li> <li>8. Program costs (portion) to offset annual fish losses resulting from pumping at Banks Pumping Plant (DWR-DFG Agreement)</li> </ol>
	<b>VARIABLE OMP&amp;R COMPONENT</b>	<ol style="list-style-type: none"> <li>1. Power purchase costs <ol style="list-style-type: none"> <li>a. Capacity</li> <li>b. Energy</li> <li>c. Pine Flat bond service, O&amp;M, and transmission costs allocated to aqueduct pumping plants</li> </ol> </li> <li>2. Alamo, Devil Canyon, Warner, and Castaic power generation credited at the powerplant reach and charged to aqueduct pumping plants</li> <li>3. Hyatt-Thermalito and Thermalito Diversion Dam powerplant generation charged to aqueduct pumping plants (credits for this generation are reflected in the Delta Water Rate)</li> <li>4. Replacement deposits for equipment at pumping plants and powerplants</li> <li>5. Credits from sale of excess SWP system power</li> <li>6. Program costs (portion) to offset annual fish losses resulting from pumping at Banks Pumping Plant (DWR-DFG Agreement)</li> </ol>

NOTE: Excludes costs recovered under the East Branch Enlargement Transportation Charge.

**Fig. B-3. Composition of Delta Water Charge and Transportation Charge**

The formula for computing the Delta Water Rate, Article 22(f) of the standard provisions, has been designed to ensure that all adjustments for prior overpayments or underpayments of the Delta Water Charge are accounted for in a redetermination of the rate. Since the redetermined rate applies to all future entitlements, such adjustments are amortized during the remainder of the project's repayment period. This appendix includes a redetermination of the Delta Water Rate for 1992.

Those redeterminations exclude four charges associated with water service other than the Delta Water Charge and the Transportation Charge. Those excluded charges (and the manner in which such excluded charges are treated in this appendix) are:

1. Advances of funds pursuant to Article 24(d) of the standard provisions for excess capacity constructed by the state at the request of contractors.
2. Advances of funds pursuant to Article 10(d) of the standard provisions for delivery structures (turnouts) constructed by the state at the request of contractors. Partial information concerning actual and projected capital costs of such delivery structures is included in this appendix. Statements concerning these costs and data are furnished to the appropriate contractors at various times and are not part of the annual statements.
3. Payments for sale and service of surplus water to entities other than contractors, pursuant to Article 21 of the standard provisions are also excluded. Those payments are generally based on the unit rates shown in Table B-25. Net revenues resulting from noncontractor service are applied as indicated on page 24 of Bulletin 132-71.
4. Payments under the Devil Canyon-Castaic contract for costs of the Devil Canyon and Castaic facilities allocable to power generation. Charges billed as a result of the contract are billed separately from those billed as a result of the water supply contract. Information about the treatment of such charges in relation to redetermined transportation charges is included in special attachments to the bills of the six participating contractors.

The time and method of payment for corresponding components of the Delta Water Charge and the Transportation Charge are as follows:

1. The capital cost components of the Delta Water Charge and the Transportation Charge are paid in two semiannual installments, due January 1 and July 1 of each year on the basis of statements furnished by the state about July 1 of the preceding year.
2. The minimum OMP&R components of the Delta Water Charge and the Transportation Charge are paid in 12 equal installments, due the first of each month and based on statements furnished by the state about July 1 of the preceding year.
3. The variable OMP&R component of the Transportation Charge is paid in varying monthly amounts and due the fifteenth day of the second month following actual water delivery. The charges are projected based on a unit charge per acre-foot established about July 1 of the preceding year. Those unit charges may be revised several times during the year to reflect current power costs and revenues. The unit charges are applied to actual monthly delivery quantities as determined by the state on or before the fifteenth day of the month following actual delivery.

## ***Bases for Allocating Reimbursable Costs Among Contractors***

This section includes information about the state's procedures for allocating reimbursable costs of project transportation facilities among contractors (see upper right portion of Figure B-1 for diagram). Those costs do not include annual costs of Off-Aqueduct Power facilities, which are explained in the section "Project Water Charges."

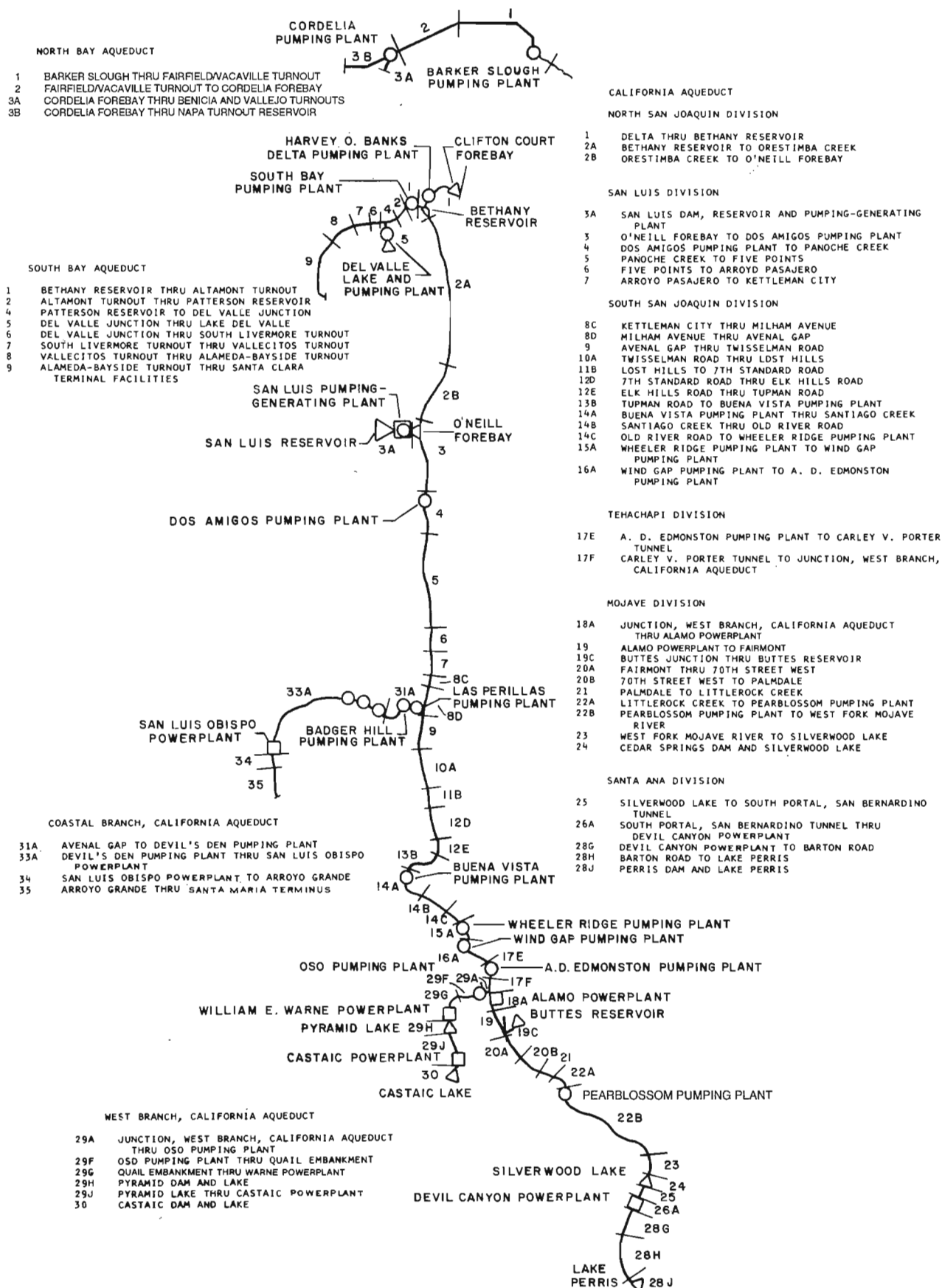
### ***Capital and Minimum OMP&R Costs***

Figure B-4, on the next page, includes information about the repayment reaches that form the basis for allocating reimbursable costs of the project's transportation facilities among contractors.

Allocations of reimbursable capital costs and minimum OMP&R costs of each reach are based on the proportionate maximum use of that reach by respective



## Project Transportation Facilities



**Fig. B-4. Repayment reaches and descriptions**

contractors under planned conditions of full development.

Information about the derivation of ratios that represent the proportionate maximum use of each aqueduct reach by the respective contractors was included in Bulletin 132-70. The ratios in Bulletin 132-70 were subsequently revised for (1) the North Bay Aqueduct; (2) the South Bay Aqueduct; (3) the California Aqueduct from the Delta to the Coastal Branch; and (4) the Coastal Branch.

Revised ratios for the first reach of the California Aqueduct and for the South Bay Aqueduct are included in Bulletin 132-72 and reflect certain contractual amendments executed early in 1972 regarding South Bay Aqueduct use (see pages 33-35 of Bulletin 132-73).

Bulletin 132-83 also included information about revised ratios for reaches in the Coastal Branch and in the California Aqueduct from the Delta to the Coastal Branch. Those revisions reflected a contract amendment with Santa Barbara County Flood Control and Water Conservation District that resulted in a reduction of its maximum annual entitlement from 57,700 acre-feet to 45,486 acre-feet.

Bulletin 132-86, page 170, included information about revised ratios for reaches of the North Bay Aqueduct. Those revisions reflect contract amendments executed with Solano County Water Agency in 1985 and with Napa County Flood Control and Water Conservation District in 1986.

Bulletin 132-89, Table B-1 and Table B-2, include information about a revision to the ratios for South Bay Aqueduct Reach 8. That revision reflects a contract amendment executed with Alameda County Water District in 1988.

Table B-1 and Table B-2 include information about a redetermination of reach ratios currently applicable to reimbursable capital and minimum OMP&R costs. That redetermination includes the revisions previously described and reflects the consolidation of Castaic Lake Water Agency and Devil's Den Water District.

Requested excess capacity is omitted when deriving ratios applicable to capital costs because the capital costs for the excess capacity are paid on an incremental-cost basis and not a proportionate-use basis. However, requested excess capacity is accounted for in the ratios applicable to minimum OMP&R costs.

## ***Variable OMP&R Costs***

Article 26(a) includes provisions to ensure that the variable OMP&R component of the Transportation Charge will result in a return to the state of those costs that depend on and vary with the amount of SWP water delivered. (The minimum OMP&R component results in a return of those operating costs that do not vary with deliveries.) According to Article 26(a), all such costs for a reach for a given year will be allocated among contractors in proportion to the actual annual use of that reach by the respective contractors.

Table B-3 includes a summary of the total variable OMP&R costs for each SWP pumping and power plant. Those variable costs consist of:

- Costs of capacity and energy used exclusive of associated power transmission and station service charges (transmission and station service costs are classified as minimum OMP&R costs)
- Credits for capacity and energy produced at aqueduct power recovery plants (treated as negative costs)
- Annual payments to sinking fund reserves to finance periodic replacement of major plant machinery components having economic lives shorter than the project repayment period. Sinking fund payments for 1962 through 1979 were based on a schedule determined in 1970. Sinking fund payments for 1980 through 2035 are based on revised replacement schedules. That schedule was updated in 1986 and 1991. The Department plans to update the replacement deposit schedule periodically.

Table B-3 excludes amounts of plant capacity and energy costs associated with surplus water service after May 1, 1973. Prior to that date, surplus water service was charged the same unit variable OMP&R component as entitlement water service. The rate structure for surplus water service was significantly changed on May 1, 1973. Since then, capacity and energy costs for pumping surplus water have been allocated directly to those water contractors receiving that water service.

## ***Water Conveyance***

Four tables in this appendix, B-4, B-5A, B-5B, and B-6, include information about the water conveyance quantities that form the basis of allocation of costs.

Table B-4 includes the schedules of annual entitlements as set forth in Table A and Article 6(a) of each water supply contract. Table B-5A includes amounts of actual and projected entitlement water quantities delivered from each aqueduct reach to each contractor. Projected deliveries for 1992 through 2035 are based on contractors' requests for future water deliveries. The quantities included in Table B-5A also include nonproject water delivered to contractors and surplus water deliveries prior to May 1, 1973. (For a comparison of historical deliveries with annual entitlements, see Table 14 in Chapter 5.)

Table B-5B includes a summary of amounts of actual and projected annual entitlement water quantities delivered or to be delivered to each contractor. The quantities also include amounts of nonproject water and surplus water delivered prior to May 1, 1973.

Table B-6 includes a summary of the amounts of annual entitlement water quantities conveyed or to be conveyed through each aqueduct pumping plant or power plant for each of the following functions:

*Deliveries—Water Supply.* Water made available to contractors at down-aqueduct delivery structures, including certain hypothetical quantities to facilitate cost allocations for those years when deliveries are made from net annual storage withdrawals.

The net annual amounts of storage withdrawals are hypothetically added to the actual amounts conveyed from the Delta to the reservoirs, since deliveries made from storage withdrawals bear the same variable OMP&R costs per acre-foot as if the deliveries were actually conveyed that year from the Delta.

The hypothetical increases in the deliveries made from reservoir storage withdrawals are offset by equal credits to the minimum OMP&R costs of the respective reservoirs. Thus, the variable OMP&R components per acre-foot (Table B-17) may be applied to the total annual quantities delivered either from aqueduct reservoir storage or from the Delta.

*Initial Fill Water.* Water required for initial filling of down-aqueduct reaches and reservoirs or for repayment of preconsolidation water used during construction.

*Deliveries—Recreation.* Water delivered to down-aqueduct recreation developments or used for fish and wildlife mitigation or enhancement.

*Operational Losses.* Water lost through evaporation and seepage from all down-aqueduct reaches.

*Reservoir Storage Changes.* Water placed in down-aqueduct reservoir storage after initial filling of the reservoirs, including projected net annual storage accretions (positive values) and withdrawals (negative values) for all down-aqueduct reservoirs of the project transportation facilities.

Those variable OMP&R costs (Table B-12) that are allocable to storage accretions are assigned to the minimum OMP&R costs of the respective reservoirs. With one exception, "Reservoir Storage Changes" also includes SWP water placed into southern California groundwater storage in 1978 through 1982 (as positive amounts); and water withdrawn from storage and delivered to contractors in 1979, 1982, 1987, 1988, and 1989 (as negative amounts). The exception is Banks Pumping Plant, where groundwater additions and withdrawals are included in "Conservation Water."

Table B-6 also includes a summary of the following two amounts under the heading "Conservation Water" (Column 25):

1. Net annual water amounts stored and projected to be stored in San Luis Reservoir
2. Water lost and projected to be lost through evaporation and seepage from San Luis Reservoir and from the water conservation portion of the California Aqueduct.

"Conservation Water" includes initial fill water, operational losses, and net annual storage changes associated with San Luis Reservoir (and the portion of the California Aqueduct that is allocated to conservation). The same allocation procedure outlined above for transportation facilities also applies to conservation facilities. Except in the case of releases from San Luis Reservoir for delivery to downstream contractors, hypothetical cost increases are added to the variable OMP&R cost to be reimbursed through the Transportation Charge and deducted from the minimum OMP&R costs to be reimbursed through the Delta Water Charge.

San Luis Reservoir is operated to conserve water for future delivery to downstream contractors. To account for costs associated with reservoir storage, those power and replacement costs of the Banks Pumping Plant (a joint transportation-conservation facility) that are allocated to the conveyance of annual conservation water quantities are transferred to the capital costs of San Luis Reservoir (during initial fill) or to the minimum

OMP&R costs of San Luis Reservoir (subsequent to initial fill).

In years of net storage withdrawal from San Luis Reservoir, a portion of the minimum OMP&R cost of the reservoir is transferred to the variable OMP&R cost of the Banks Pumping Plant. That transfer is equal to the variable OMP&R cost per acre-foot of delivery through the Banks Pumping Plant for that year, multiplied by the acre-feet of deliveries derived from San Luis Reservoir storage for that year. Table B-6 also includes amounts of nonproject water and surplus water delivered prior to May 1, 1973.

## Bases for Reimbursable Costs

This section includes descriptions of the methods used to derive the costs allocated by the procedures outlined in the preceding section. A diagram of the cost derivation process is diagrammed in the upper-left quadrant of Figure B-1.

First, the capital and OMP&R costs of all SWP facilities are allocated among the various project purposes according to the allocation percentages in Figure B-5. Those percentages are subject to revision in the future. The redeterminations in this appendix involve only the

costs that are allocated to water supply and power generation.

## Capital Costs

Capital costs used in the redetermination in this appendix reflect prices prevailing on December 31, 1990; future cost escalation will be reflected in subsequent bulletins.

Table B-7 includes a reconciliation of estimated total capital costs of each project conservation facility and each project transportation facility.

Table B-8 indicates costs incurred and projected to be incurred by the state in connection with each contractor's turnouts. Costs incurred by the state for both state-constructed and contractor-constructed delivery structures are paid directly by the contractors for which the structures are built. (The state incurs design review and construction inspection costs in connection with contractor-constructed turnouts.)

Table B-9 includes a list of costs and payments for excess capacity built into SWP transportation facilities according to amendments to contracts with the Metropolitan Water District of Southern California (MWDSC), San Gabriel Valley Municipal Water District, and Antelope Valley-East Kern Water Agency as follows:

1. Additional costs incurred by the state for requested excess capacity
2. Advances, by water contractors, of funds for such costs
3. Credits for advances in excess of costs, which were applied to the respective contractors' installments of the capital cost component of the Transportation Charge in 1981

According to Amendment 2 of MWDSC's contract, 809 cfs of excess capacity originally was constructed in reaches of the West Branch at MWDSC's request. According to Amendment 7, that capacity was reclassified as basic capacity of SWP transportation facilities. MWDSC paid \$16.3 million as a prepayment of the capital cost component of the Transportation Charge in lieu of advancing funds for the original requested capacity.

Amendment 5 to MWDSC's contract requires that additional costs for modifications to the Santa Ana Valley Pipeline (required for enlargement of Lake Perris) are to be allocated to MWDSC and returned to

<i>Project Facilities</i>	<i>Water Supply and Power Generation</i>		<i>All other Purposes (Nonreimbursable)</i>	
	<i>Capital Costs</i>	<i>Minimum OMP&amp;R Costs</i>	<i>Capital Costs</i>	<i>Minimum OMP&amp;R Costs</i>
	(in percent)			
<b>Project Conservation Facilities</b>				
Frenchman Dam and Lake	21.5	0.0	78.5	100.0
Antelope Dam and Lake	0.0	0.0	100.0	100.0
Grizzly Valley Dam and Lake Davis	1.0	1.8	99.0	98.2
Oroville Division <sup>a</sup>	97.1	99.5	2.9	0.5
California Aqueduct, Delta to				
Dos Amigos Pumping Plant	96.6	96.7	3.4	3.3
Delta Facilities	86.0	86.0	14.0	14.0
<b>Transportation Facilities</b>				
Grizzly Valley Pipeline	100.0	100.0	0.0	0.0
North Bay Aqueduct	100.0	100.0	0.0	0.0
South Bay Aqueduct:				
Del Valle Dam and Lake Del Valle	25.2	22.0	74.8 <sup>b</sup>	78.0 <sup>c</sup>
Remainder of South Bay Aqueduct	100.0	100.0	0.0	0.0
California Aqueduct:				
Delta to Dos Amigos Pumping Plant	96.6	96.7	3.4	3.3
Dos Amigos Pumping Plant to termini (excluding Coastal Branch)	94.3	96.9	5.7	3.1
Coastal Branch	100.0	100.0	0.0	0.0

<sup>a</sup>Percentages shown are applicable to the remaining costs of the division after excluding costs allocated to flood control that are reimbursed by the federal government (22 percent of capital costs) and excluding specific power costs of Edward Hyatt and Thermalito powerplants and switchyards.

<sup>b</sup>Percentage shown consists of 48.0 percent recreation and 26.8 percent flood control.

<sup>c</sup>Percentage shown consists of 44.9 percent recreation and 33.1 percent flood control.

**Fig. B-5. Cost allocation factors**

the state through payments of the Transportation Charge. As indicated in Bulletin 132-72, page 98, the additional costs to be repaid through MWDSC's capital cost component for the aqueduct reach from Devil Canyon Powerplant to Barton Road total about \$6.7 million.

Table B-10 includes amounts of actual and projected annual capital costs of each aqueduct reach that will eventually be returned to the state, with interest, through contractors' payments of the capital cost component under the Transportation Charge and of debt service under the Devil Canyon-Castaic contract.

### *Annual Operating Costs*

Annual operating costs allocable to water supply and power generation are returned to the state through the minimum and variable OMP&R components of Delta Water and Transportation charges and through a portion of revenues from energy sales. All reimbursable operating costs of conservation facilities are included in the minimum OMP&R component of the Delta Water Charge.

Table B-11 includes a listing of the amounts of actual and projected costs to be reimbursed through payments of (1) the minimum OMP&R component under the Transportation Charge; and (2) allocated operating costs under the Devil Canyon-Castaic contract. Also included are the following seven types of operating costs incurred in annual amounts that do not vary with water quantities delivered to the contractors:

1. All direct labor charges for field operation and maintenance personnel, including associated indirect costs
2. A distributed share of general operating costs that cannot be identified solely with one facility or aqueduct reach
3. Electric power transmission and station service costs allocable to aqueduct pumping and power recovery plants
4. All costs for equipment, materials, and supplies and for replacement of electronic control systems
5. Portions of power and replacement costs of all up-aqueduct pumping and power plants that are allocable to the annual conveyance of water (1) lost to evaporation and seepage from respective aqueduct reaches; or (2) placed into storage in respective reservoirs of the project transportation facilities (after initial fill)

6. Credits, which offset those costs in (2) above, for deliveries drawn from reservoir storage
7. Escalation of projected operating costs at 5 percent per year for 1991, 1992 and 1993

Table B-12 includes amounts of the portions of the variable OMP&R costs in Table B-3 that are allocable to the water supply delivery quantities included in Table B-6 and reimbursed through payments of the variable OMP&R component of the Transportation Charge.

The following four adjustments are made to the Table B-3 costs to derive the Table B-12 costs:

1. A portion of the variable OMP&R costs of each plant is allocated to recreation. The allocation to recreation is in proportion to the quantity of water conveyed through each plant each year for delivery to on-shore recreational developments.
2. That portion of variable plant costs attributable to the initial fill of aqueduct reaches is allocated to the joint capital costs of respective down-aqueduct reaches and reservoirs.
3. That portion of costs attributable to evaporation and seepage is allocated to the joint minimum OMP&R costs of respective down-aqueduct reaches and reservoirs.
4. Adjustments are made for additions or withdrawals from storage in aqueduct reservoirs. In years when water is added to storage in aqueduct reservoirs, the cost of conveying this water into storage is charged to the minimum OMP&R costs of the corresponding reservoir. The unit cost is equal to the variable OMP&R unit rate for the year the water is conveyed into storage. In years when storage in aqueduct reservoirs is decreased for the purpose of making deliveries, a credit is applied to the minimum OMP&R costs of the reservoir from which the storage is released. This credit is equal to the number of acre-feet of storage reduction times the variable OMP&R unit rate for the year storage is released.

Table B-13 includes a summary of actual and projected capital and operating costs of the initial project conservation facilities to be reimbursed through payments under (1) the Delta Water Charge; (2) Oroville power sales; and (3) Gianelli Generating Plant credits. Included in Table B-13 are credits applied to the reimbursable capital costs of the project conservation

facilities according to negotiated settlements concerning the magnitude of incurred planning costs for the period 1952 through 1978.

## Project Water Charges

This section includes information about the redetermination of past and projected components of the Transportation Charge for annual revision of Tables C through G of each water contract. This section also includes information about the Water System Revenue

Bond Surcharge and a description of the derivation of the unit Delta Water Rates.

A summary of equivalent unit charges for each acre-foot of entitlement water service is also included for each contractor and each aqueduct reach. A diagram of all calculations may be found in the lower half of Figure B-1.

## Transportation Charges

The accumulation of allocated costs of each aqueduct reach to each contractor forms the basis for the components of the Transportation Charge.

Table B-14 includes a summary of each contractor's share of the capital costs of aqueduct reaches presented in Table B-10. Those amounts are determined by applying proportionate-use ratios set forth in Table B-1 to the costs shown in Table B-10. The resulting allocated costs are set forth in Table C of the respective water supply contracts.

Prepayments of the capital cost component, required under MWDSC's Amendment 7, are included as negative capital costs in Table B-14 and in Table C of MWDSC's Statement of Charges for 1992. Solano County Water Agency, Empire West Side Irrigation District, and Castaic Lake Water Agency also prepaid capital costs (see Table B-14 footnotes).

Both Table B-14 and Table C of the six contracts for project water service below Devil Canyon Powerplant and Castaic Powerplant include the capital costs reimbursable under the Devil Canyon-Castaic contract.

Table B-15 includes a summary of the capital cost components of the Transportation Charge for each contractor for each year of the project's repayment period, based on the amortization schedules included in Figure B-6 and determined at the current Project Interest Rate of 4.713 percent per annum.

Those estimated components, subsequently adjusted for prior overpayments or underpayments, are included in Table D of the water supply contracts. Costs of excess capacity are billed separately and are not included in Table B-15. Table B-15 includes the debt service payments due from the six contractors down-aqueduct from Devil Canyon Powerplant and Castaic Powerplant according to terms of the Devil Canyon-Castaic contract.

Table B-16A includes a summary of the minimum OMP&R components of the Transportation Charge for

<i>Contractor</i>	<i>Year of Initial Payment<sup>a</sup></i>
Alameda County Flood Control and Water Conservation District, Zone 7 <sup>b</sup>	1963
Alameda County Water District	1963
Antelope Valley-East Kern Water Agency	1963
Castaic Lake Water Agency	1964
City of Yuba City <sup>c</sup>	
Coachella Valley Water District	1964
County of Butte <sup>c</sup>	
County of Kings	1968
Crestline-Lake Arrowhead Water Agency	1964
Desert Water Agency <sup>d</sup>	1963
Dudley Ridge Water District <sup>e</sup>	1968
Empire West Side Irrigation District <sup>e</sup>	1968
Kern County Water Agency	
Agricultural Use <sup>e</sup>	1968
Municipal and Industrial Use	1965
Littlerock Creek Irrigation District	1964
Metropolitan Water District of Southern California	1963
Mojave Water Agency	1964
Napa County Flood Control and Water Conservation District	1966
Oak Flat Water District <sup>e</sup>	1968
Palmdale Water District	1964
Plumas County Flood Control and Water Conservation District	1970
San Bernardino Valley Municipal Water District	1963
San Gabriel Valley Municipal Water District <sup>f</sup>	1963
San Geronio Pass Water Agency <sup>f</sup>	1963
San Luis Obispo County Flood Control and Water Conservation District <sup>g</sup>	1964
Santa Barbara County Flood Control and Water Conservation District <sup>f</sup>	1964
Santa Clara Valley Water District	1963
Solano County Water Agency	1973
Tulare Lake Basin Water Conservation District <sup>h</sup>	1968
Ventura County Flood Control District	1964

<sup>a</sup> Allocated capital costs of transportation facilities are amortized in equal annual installments, unless otherwise noted.

<sup>b</sup> Principal payments on each annual capital cost prior to 1971 delayed until calendar year 1972, except payments for 1963.

<sup>c</sup> Payments on Delta Water Charge only.

<sup>d</sup> Deferred and added to 1964 payment with accrued interest.

<sup>e</sup> Under Article 45 of the contracts for supply of agricultural water, capital costs of transportation facilities allocated to agricultural water supply are amortized via an equivalent unit rate per acre-foot applied to the annual entitlements (Table B-4) through the project repayment period.

<sup>f</sup> See footnote d.

<sup>g</sup> Exception: all principal and interest payments for costs of "Coastal Stub" were deferred until 1976.

<sup>h</sup> See footnote e.

**Fig. B-6. Criteria for amortizing capital costs of transportation facilities**

each year of the project's repayment period. Those estimated components, subsequently adjusted for prior overpayments or underpayments, are included in Table E of the respective contracts.

The total amounts included in Table B-16A are determined by applying the proportionate-use ratios in Table B-2 to the reach costs presented in Table B-11. Table B-16A excludes charges for off-aqueduct power facilities, which are included separately in Table B-16B. Both Table B-16A and Table E for the six contractors down-aqueduct from Devil Canyon Powerplant and Castaic Powerplant include the portion of operating costs payable under the Devil Canyon-Castaic contract.

As part of operating agreements with the Department, Kern County Water Agency (KCWA) is billed for any additional operating costs caused by early installation of units by Berrenda Mesa Water District in Las Perillas Pumping Plant and Badger Hill Pumping Plant (see Bulletin 132-71, page 7). According to those agreements, the following minimum OMP&R costs of Reach 31A are assigned directly to KCWA, with the remaining reach costs allocated by application of the proportionate-use ratios:

<i>Year</i>	<i>Direct Charge</i>	<i>Year</i>	<i>Direct Charge</i>
1969	\$ 46,510	1982	\$ 82,047
1970	46,302	1983	89,870
1971	139,976	1984	104,202
1972	94,751	1985	156,990
1973	71,885	1986	135,336
1974	99,075	1987	130,833
1975	127,456	1988	132,919
1976	137,770	1989	119,802
1977	120,371	1990	117,091
1978	156,164	1991	258,798
1979	118,913	1992	303,282
1980	148,562	1993	281,811
1981	74,633	1994	258,577
<b>Total</b>			<b>\$ 3,553,926</b>

Table B-16B includes a projection of annual charges for off-aqueduct power facilities allocated to each water contractor, adjusted for prior overpayments or underpayments of charges. Those charges are used to repay all off-aqueduct power costs, including bond service, deposits for reserves, operation and maintenance costs, fuel costs, taxes, and insurance.

The General Bond Resolution, adopted October 1, 1979, requires that sufficient revenues be collected each year to repay all of those costs. In addition, an amount totaling 25 percent of the annual bond service is collected each year to ensure that sufficient funds are available to cover all annual costs. Any revenues collected and not needed during the year are refunded to the contractors in the next year.

The following tabulation includes a summary of off-aqueduct power facility charges for 1990.

<i>Charges</i>	
Reid Gardner	\$ 98,784,071
Bottle Rock	21,347,248
South Geysers	7,945,516
<b>Total</b>	<b>\$ 128,076,835</b>
<i>Credits</i>	
Off-Aqueduct Power Sales	\$ 9,071,109
Credits Related to Delivery of Purchased Water:	
Napa County FC&WCD	81,572
Santa Clara Valley WD	533,136
Tulare Lake Basin WSD	227,961
San Francisco	76,915
Westlands	94,032
Total	10,084,725
<b>Grand Total</b>	<b>\$ 117,992,110</b>

The following tabulation includes amounts of projected charges for off-aqueduct power facilities and an amount equal to 25 percent of annual bond service for 1991 and each year thereafter.

<i>Year</i>	<i>Direct Charge Annual Cost</i>	<i>25 Percent Bond Service</i>
1991	\$ 128,168,139	\$ 13,998,816
1992	129,907,805	14,010,053
1993	134,428,130	14,009,717
1994	136,346,536	14,008,599
1995	130,332,056	14,005,703
1996	134,325,123	14,004,316
1997	133,339,820	14,007,255
1998	130,374,481	14,001,738
1999	125,236,039	14,002,794
2000	115,767,325	14,000,187
2001	114,371,051	13,997,866
2002	108,992,204	13,996,032
2003	103,691,170	14,009,959
2004	98,320,665	14,010,193
2005	89,617,809	14,002,356
2006	87,405,849	14,016,098
2007	82,009,824	14,011,628
2008	76,624,118	14,009,021
2009	71,010,753	14,000,883
2010	63,334,470	13,999,361
2011	60,266,054	14,001,612
2012	54,228,056	14,068,947
2013	14,220,537	5,017,189
2014	25,929,184	5,038,437
2015	10,176,075	2,010,555
2016	5,519,017	1,103,803
2017	2,484,018	496,804
2018	2,488,044	497,609
2019	2,492,473	498,495
2020	2,496,688	499,338
2021	2,501,410	500,282
2022	2,505,915	501,183
2023	2,510,823	502,165
2024	4,926,961	985,392

The annual charges for off-aqueduct power facilities are allocated among contractors in proportion to the electrical energy required to pump entitlement water for the year. The initial allocation for the statements of charges is based on estimates of energy to pump requested entitlement water deliveries.

An interim adjustment in the allocation of power costs may be made in May of each year based on April revisions in water delivery schedules for annual entitlement and updated cost estimates. An additional adjustment is made the following year based on actual entitlement water deliveries and actual costs for the year.

The energy required to pump each contractor's entitlement water is calculated using the following kWh/acre-foot factors for the pumping plants upstream from the delivery turnout. The amounts listed include transmission losses.

<i>Pumping Plant</i>	<i>kWh per Acre-Foot</i>	
	<i>At Plant</i>	<i>Cumulative from Delta</i>
Barker Slough	223	223
Cordelia-Benicia	434	657
Cordelia-Vallejo	178	401
Cordelia-Napa	563	786
Banks	296	296
South Bay including Del Valle	869	1,165
Dos Amigos	138	434
Las Perillas	77	511
Badger Hill	200	711
Buena Vista	242	676
Wheeler Ridge	295	971
Chrisman	639	1,610
Edmonston	2,236	3,846
Pearblossom	703	4,549
Oso	280	4,126

Table B-17 includes a summary of actual and projected total variable OMP&R costs for each acre-foot of water conveyed through each aqueduct pumping plant and power plant for each year of the Project repayment period. Those data are derived according to the following procedure specified in Article 26(a) of the Standard Provisions for calculating the variable OMP&R component of the Transportation Charge:

- An annual charge per acre-foot of projected water deliveries to all contractors served from or through each reach is determined so the projected variable OMP&R costs to be incurred for each reach will be returned to the state.
- The total annual variable OMP&R component for any contractor for a given reach is obtained by multiplying the unit charge associated with that reach by the quantity of water actually delivered to the contractor downstream of the reach.

Data summarized in Table B-17 have been derived by dividing costs in Table B-3 by quantities of water in Table B-6. However, certain costs included in Table B-3 for extra peaking service, which would otherwise constitute variable OMP&R costs, are assigned directly to contractors requesting this service (see Bulletin 132-71, page 21, and Water Service Contractors Council Memo

No. 593, July 10, 1970). Those costs are excluded from unit charges shown in Table B-17. The amounts of extra peaking charges for additional power capacity follow:

<i>Year</i>	<i>Agency</i>	<i>Pumping Plant</i>	
		<i>Dos Amigos</i>	<i>Las Perillas and Badger Hill</i>
1972	Kern County Water Agency Tulare Lake Basin Water Agency	\$ 9,553	\$ 24,700
		10	
1973	Kern County Water Agency		6,016
1974	Kern County Water Agency		7,140
1975	Kern County Water Agency	494	6,397
1976	Kern County Water Agency		1,981
1978	Kern County Water Agency Dudley Ridge Water District County of Kings	41,832 2,086 43	3,772
	Kern County Water Agency	2,322	
1979	Kern County Water Agency		3,245

The unit rates indicated in Table B-17 constitute the rate for the pumping plants and power plants listed. The cumulative rates constitute the total rate, cumulative from the Sacramento-San Joaquin Delta, and are applicable to deliveries from or downstream of the pumping plants and power plants. Extra peaking service costs are excluded.

Table B-18 includes the variable OMP&R components of the transportation charge for each contractor for each year of the project's repayment period. Table B-18 is developed from the costs per acre-foot included in Table B-17 and the delivery quantities for each contractor from each reach as indicated in Table B-5A, plus any costs for extra peaking service. Those estimated components, subsequently adjusted for prior overpayments or underpayments, are included in Table F of the respective water supply contracts.

Table B-19 includes a summary of the annual Transportation Charges for each contractor (the sums of the corresponding amounts included in tables B-15, B-16A, B-16B, and B-18). Those estimated payments, subsequently adjusted for prior overpayments or underpayments, are set forth in Table G of the respective water supply contracts.

Both Table B-19 and Table G for the six contractors down-aqueduct from Devil Canyon Powerplant and Castaic Powerplant include amounts of debt service and operating cost payments due according to provisions of the Devil Canyon-Castaic Contract.

## *Delta Water Charges*

Table B-20A represents the calculation of the Delta Water Rate for the initial conservation facilities applicable in 1992 and 1993 according to the amended



articles 22(e) and 22(g) of all 29 contracts. The Delta Water Rate was calculated at a project interest rate of 4.713 percent. That Delta Water Rate is used to compute future Delta Water Charges included in Table B-21.

Table B-20B includes each component of the 1992 Delta Water Rates from Table B-20A.

Table B-21 includes a summary of the annual Delta Water Charge for each contractor. Table B-21 is developed by applying the total rate per acre-foot, as shown in Table B-20A, to the amount of entitlement water for each contractor as indicated in Table B-4.

Table B-22 includes a summary of the Water System Revenue Bond (WSRB) Surcharge to the Delta Water Charge and the transportation capital cost component of each contractor. The surcharge shown in Table B-22 includes the financing costs of WSRB Series B through E. This surcharge is levied according to an amendment to the water supply contracts for repaying Water System Revenue Bond financing costs. All long-term water supply contractors have signed that amendment.

### ***Total Water Charges***

Table B-23 includes a summary of the total annual charges to each contractor (the sum of the Transportation Charge in Table B-19, the Delta Water Charge in Table B-21, and the Water System Revenue Bond Surcharge in Table B-22). The charges are unadjusted for prior overpayments or underpayments. The total Transportation Charge for each contractor is listed in tables B-19 and B-21.

### ***Equivalent Total Water Charges***

Table B-24 includes information about the Transportation Charge and Delta Water Charge in terms of the equivalent unit charge for each acre-foot of entitlement water now estimated to be delivered to the respective contractors.

Those equivalent charges, if applied to each acre-foot of entitlement water delivered to date; all surplus water delivered prior to May 1, 1973; and all entitlement water now estimated to be delivered during the remainder of the Project repayment period (Table B-5B) would provide the same principal sum at the end of the project's repayment period as annual payments to be made as part of the Delta Water Charge and Transportation Charge, plus interest at the Project Interest Rate.

The equivalent unit Delta Water Charges included in Table B-24 are greater than those in Table B-20A because current estimates of entitlement water service are less for most contractors than the amounts shown in Table A.

### ***Equivalent Water Costs by Reach***

Table B-25 includes a summary of the equivalent unit transportation cost of conveying entitlement water through respective aqueduct reaches of the Project Transportation Facilities.

Those unit costs provide the basis of charges assessed for (1) for extra service (such as for delivery of entitlements down-aqueduct from a contractor's turnout); (2) together with the Delta Water Charge per acre-foot, surplus water service to entities other than the 29 long-term water supply contractors; and (3) for wheeling service to entities other than the long-term water supply contractors. An explanation of wheeling services in the California Aqueduct may be found at the end of this appendix.

The cumulative unit conveyance costs indicated for reaches in Table B-25 do not necessarily equal the equivalent unit transportation charges to contractors served from such reaches. The unit charges in Table B-24 account for the rate of water demand buildup and cost allocation factors of the individual contractors; however the unit costs included in Table B-25 reflect the effect of melding the respective buildups and allocation criteria of all contractors whose entitlements are conveyed through a given reach. Table B-25 also includes surplus water prior to May 1, 1983.

### ***East Branch Enlargement Facility Charges***

Table B-26 reflects the Department's projection of annual capital costs of the East Branch Enlargement facilities for each aqueduct reach. Those projections will be redetermined in future bulletins to include:

1. A reallocation of costs of constructing the present East Branch facilities between Alamo Powerplant and Silverwood Lake
2. A reallocation of costs of Silverwood Lake to reflect additional use as a result of East Branch Enlargement operation

3. Reallocation of costs of San Bernardino Tunnel to reflect redistribution of flow capacities necessary for the East Branch Enlargement facilities
4. Actual construction costs of the enlargement

The costs in items one through four will be recovered with interest through payments by the seven southern California water contractors participating in the enlargement, according to their amended water supply contracts (see Figure B-7 on the following page).

Table B-27 includes a listing of the projected minimum OMP&R costs for each reach of the enlargement to be repaid by the seven southern California contractors participating in the East Branch Enlargement.

Currently, this table includes only the amounts of estimated incremental minimum OMP&R costs attributable to the East Branch Enlargement. According to Article 49(e)(1), the contractors participating in the East Branch Enlargement will also share in the remaining minimum OMP&R costs of the affected reaches according to a formula to be developed by the Department in consultation with the affected contractors. Once the formula is developed, subsequent versions of this table will reflect the transfer of a share of the minimum OMP&R costs now included in Table B-11.

Table B-28 includes a summary of the amounts of each participating contractor's share of the estimated capital costs of the East Branch Enlargement.

Table B-29 includes a summary of the amounts of the annual capital cost components of the East Branch Enlargement Transportation Charge for each participating contractor.

Table B-30 includes a summary of the amounts of the minimum OMP&R components of the East Branch Enlargement Transportation Charge for each participating contractor for each year of the project repayment period.

Table B-31 includes a summary of the amounts of the annual East Branch Enlargement Transportation charges for each participating contractor (the sums of the corresponding amounts included in Tables B-29 and B-30).

## ***Surplus and Other Water Services***

Surplus and unscheduled water has been delivered from 1968 through 1990, except during the drought years of 1977, 1988, and 1989. Table B-32 includes the quantities of surplus and unscheduled water delivered to

long-term contractors during the period of May 1, 1973, through December 31, 1990.

Table B-33 includes the amounts of the costs for power that have been incurred by the state at each pumping plant associated with surplus water deliveries included in Table B-32.

Table B-34 includes the amounts of the actual charges to each contractor for delivery of the surplus water quantities included in Table B-32. The method of determining those charges is described in Bulletin 132-77, page 117.

## ***Wheeling Services in the California Aqueduct***

When SWP has additional capability to move nonproject water through the California Aqueduct, services can include pumping, transporting (wheeling), and, if needed, storing in San Luis Reservoir. Through separate annual agreements, SWP has provided wheeling to temporary federal water contractors, with the Central Valley Project (CVP) providing the water and electrical power.

In 1975, twenty-year wheeling agreements were signed. Those agreements provide for wheeling CVP water through SWP facilities to the Cross Valley Canal in Kern County. Additional agreements provide for storage, generally in cases when water cannot be wheeled directly to the user on a demand basis.

For the most part, rates for wheeling and storing water are developed from information included in Appendix B. Wheeling rates are calculated from Appendix B tables used in developing contractors' charges for the year the water is wheeled. Wheeling rates for 1991 were developed from Appendix B tables in Bulletin 132-90.

Annual wheeling rates are developed from four sources:

1. *Table B-25.* Capital and minimum OMP&R equivalent unit transportation costs of water for the aqueduct reaches used.
2. *Table B-20B.* That portion of the Delta Water Rate associated with capital and minimum costs of California Aqueduct reaches 1, 2A, 2B, and 3. For SWP purposes, a portion of costs for these reaches is allocated to SWP contractors as part of the Delta Water Rate. Those costs are added to wheeling rates because they reflect the total costs

REACH NO.		DESCRIPTION						
18A	Junction, West Branch California Aqueduct through Alamo Powerplant							
19	Alamo Powerplant to Fairmont							
20A	Fairmont through 70th Street West							
20B	70th Street West to Palmdale							
21	Palmdale to Littlerock Creek							
22A	Littlerock Creek to Pearblossom Pumping Plant							
22B	Pearblossom Pumping Plant to West Fork Mojave River							
23B	West Fork Mojave River to Silverwood Lake (excluding Mojave Siphon Powerplant Facilities)							
23C	Mojave Siphon Powerplant Facilities							
24	Cedar Springs Dam and Silverwood Lake							
25	Silverwood Lake to South Portal, San Bernardino Tunnel							
26A	South Portal, San Bernardino Tunnel through Devil Canyon Powerplant							
26B	Devil Canyon Powerplant Bypass							
SHARE OF ENLARGEMENT CAPACITY (cfs)								
Reach No.	Antelope Valley- East Kern Water Agency	Coachella Valley Water District	Desert Water Agency	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	Metropolitan Water District of Southern California	Total
18A		151	13	136	6		1200	1506
19		151	13	136	6		1200	1506
20A	35	151	13	136	6		1200	1541
20B	35	151	13	136	6		1200	1541
21	35	151	13	136			1200	1535
22A	35	151	13	136			1200	1535
22B		151	13	136			1200	1500
23B		184	67	212			1200	1663
23C		184	67				1200	1451
24		190	78				1200	1468
25		193	83			63	1200	1539
26A		193	83			63	1200	1539
26B							300	300
FACTORS FOR DISTRIBUTING CAPITAL AND MINIMUM OMP&R COSTS OF EAST BRANCH ENLARGEMENT FACILITIES (FLOW RATIOS)								
Reach No.	Antelope Valley- East Kern Water Agency	Coachella Valley Water District	Desert Water Agency	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	Metropolitan Water District of Southern California	Total
18A	0.00000000	0.10026560	0.00863214	0.09030544	0.00398406	0.00000000	0.79681276	1.00000000
19	0.00000000	0.10026560	0.00863214	0.09030544	0.00398406	0.00000000	0.79681276	1.00000000
20A	0.02271252	0.09798832	0.00843608	0.08825438	0.00389358	0.00000000	0.77871512	1.00000000
20B	0.02271252	0.09798832	0.00843608	0.08825438	0.00389358	0.00000000	0.77871512	1.00000000
21	0.02280130	0.09837134	0.00846906	0.08859935	0.00000000	0.00000000	0.78175895	1.00000000
22A	0.02280130	0.09837134	0.00846906	0.08859935	0.00000000	0.00000000	0.78175895	1.00000000
22B	0.00000000	0.10066667	0.00866667	0.09066667	0.00000000	0.00000000	0.79999999	1.00000000
23B	0.00000000	0.11064342	0.04028863	0.12748046	0.00000000	0.00000000	0.72158749	1.00000000
23C	0.00000000	0.12680910	0.04617505	0.00000000	0.00000000	0.00000000	0.82701585	1.00000000
24	0.00000000	0.12942779	0.05313351	0.00000000	0.00000000	0.00000000	0.81743870	1.00000000
25	0.00000000	0.12540611	0.05393112	0.00000000	0.00000000	0.04093567	0.77972710	1.00000000
26A	0.00000000	0.12540611	0.05393112	0.00000000	0.00000000	0.04093567	0.77972710	1.00000000
26B	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	1.00000000

Fig. B-7. Determination of factors for distributing capital and minimum OMP&R costs of East Branch Enlargement facilities among participating contractors

of constructing and maintaining these reaches, irrespective of the SWP repayment system.

3. *Variable replacement costs.* The Department charges a fixed rate for every acre-foot of water going through SWP pumping plants to provide funds for eventual replacement of equipment. Wheeling is through the Banks Pumping Plant and sometimes through the Dos Amigos Pumping Plant. For 1992, the rates for each plant, respectively, are \$0.25 and \$0.31. These rates are revised periodically.
4. *Fish agreement costs.* On December 30, 1986, the Department of Water Resources and the Department of Fish and Game entered into an agreement to provide a means to offset specific fish losses at the Banks Pumping Plant. Specific fish losses are calculated each year; those calculations are used to develop payment amounts for a fund to pay fishery program costs. Those costs are then recalculated on an acre-foot basis by the Department and reallocated to water users based on acre-feet of pumped water. Wheeling charges are based on estimates of the maximum number of fish likely to be lost each year due to pumping in the Delta.

During May, June, and July, SWP operates under Delta export limitations as a condition of obtaining water rights permits. When deliveries from the California Aqueduct are requested during key summer months, some Cross Valley Canal contractors or contractors with annual wheeling agreements may wish to use SWP's share of water stored in San Luis Reservoir.

Advance deliveries are made from SWP water stored in San Luis Reservoir provided that the U.S. Bureau of Reclamation agrees to replace the water later in the year. The San Luis Reservoir use charge is equal to the San Luis Reservoir portion of the Delta Water Rate as indicated in Table B-20B plus the estimated value of the

net energy costs to replace water in the San Luis Reservoir.

### ***Surplus and Unscheduled Water Administrative Charges***

The costs associated with administering the surplus and unscheduled water programs are divided into the five following categories. The costs are updated annually, and both programs are administered separately.

*Category 1, Setup Costs.* Activities include setting up the initial surplus or unscheduled water program, receiving and verifying surplus water requests, preparing annual surplus or unscheduled water contracts, and determining availability of surplus water.

*Category 2, Determination of Costs.* Activities include either preparing letters notifying all surplus water contractors or verbally notifying all unscheduled water contractors of the maximum charge for water each month and determining final delivery amounts and charges.

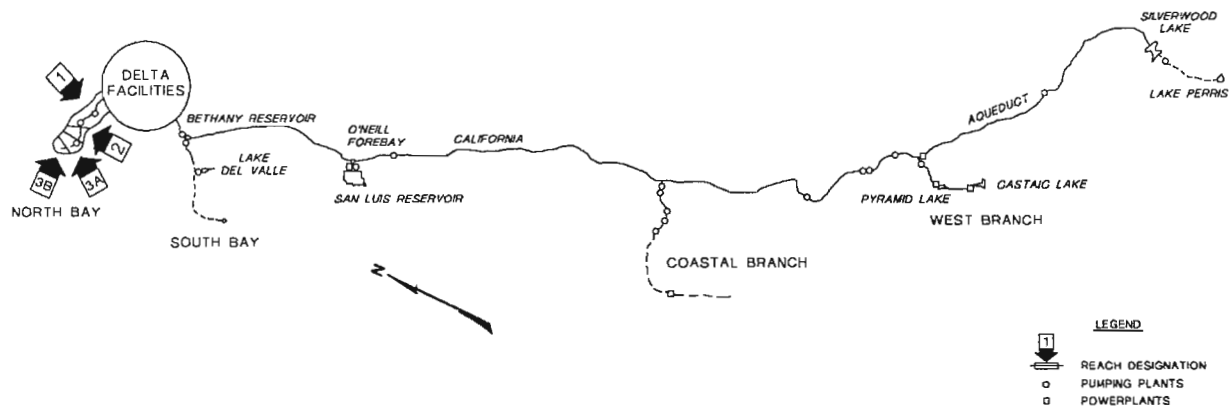
*Category 3, Schedule Revision Costs.* This cost is applicable only to the surplus water program. Activities include analyzing revised operation studies and preparing revised delivery schedules.

*Category 4, Delivery Billing Costs.* Activities include analyzing delivery data from Division of Operations and Maintenance field divisions, updating data summaries, and preparing monthly bills. The multiple scheduling each month for unscheduled water is included in the delivery billing costs.

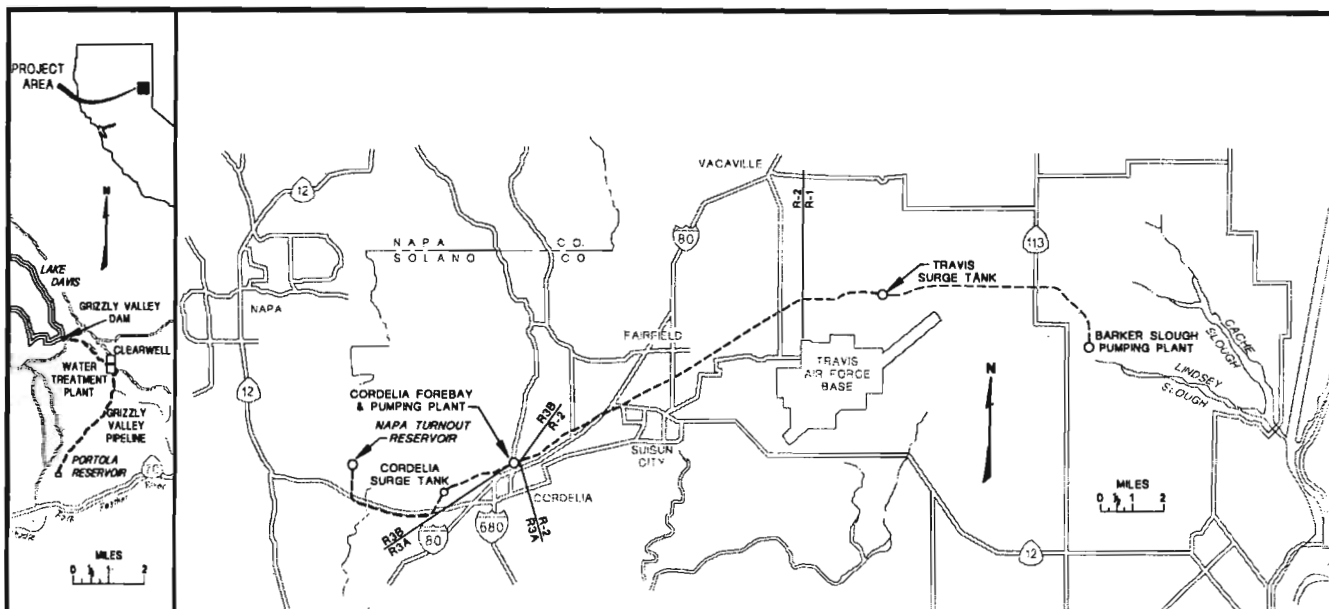
*Category 5, Computer Program Development Costs.* Activities include developing computer programs to allocate available surplus or unscheduled water among contractors and determining the power charge for pumping surplus or unscheduled water. Those costs are not incurred annually.

*Tables B-1 through B-34 follow.*

TABLES B-1 & B-2  
Proportionate Use of Each Aqueduct Reach  
(in units as indicated)

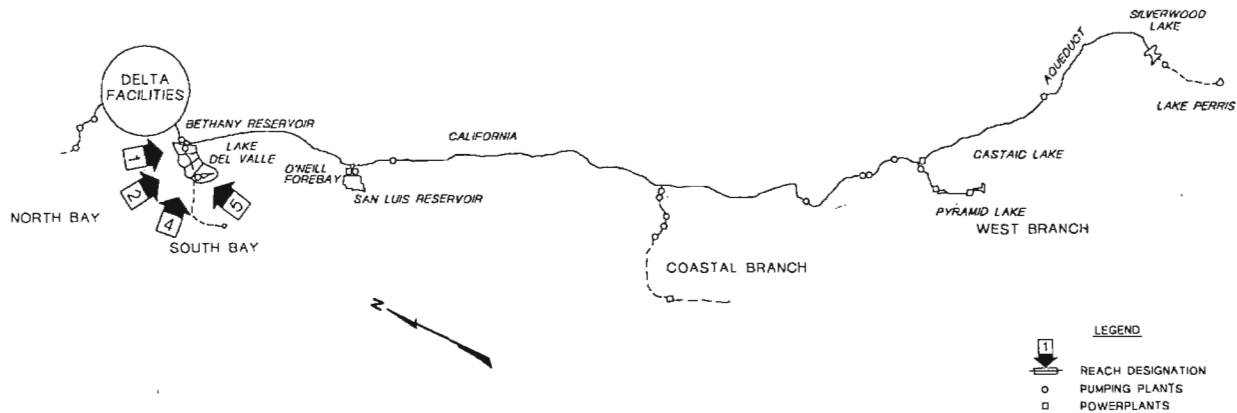


Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of			Subtotal
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PIPELINE, GRIZZLY VALLEY DAM TO PORTOLA RESERVOIR								
Plumas County Flood Control and Water Conservation District	Q AF	2700.0	0	2700.0	0	0	0	2700.0
	C CFS	8.00000	0	8.00000	0	0	0	8.00000
TOTALS	Q AF	2700.0	0	2700.0	0	0	0	2700.0
	C CFS	8.00000	0	8.00000	0	0	0	8.00000
REACH 1 - BARKER SLOUGH THRU FAIRFIELD/VACAVILLE TURNOUT								
Napa County Flood Control and Water Conservation District	Q AF	0	3.3	25000.0	21.4	0	0	25021.4
	C CFS	0	0.00543	45.58219	0.03522	0	0	45.61741
Solano County Water Agency	Q AF	19200.0	7.7	59287.0	28.6	0	0	59315.6
	C CFS	35.00712	0.01267	108.09808	0.04707	0	0	108.14515
TOTALS	Q AF	19200.0	11.0	84287.0	50.0	0	0	84337.0
	C CFS	35.00712	0.01811	153.68027	0.06230	0	0	153.76257
REACH 2 - FAIRFIELD/VACAVILLE TURNOUT TO CORDELIA FOREBAY								
Napa County Flood Control and Water Conservation District	Q AF	25007.0	11.1	25000.0	18.1	0	0	25018.1
	C CFS	45.59371	0.01827	45.58219	0.02979	0	0	45.61198
Solano County Water Agency	Q AF	0	17.9	40087.0	20.9	0	0	40107.9
	C CFS	0	0.02946	73.09096	0.03440	0	0	73.12536
TOTALS	Q AF	25007.0	29.0	65087.0	39.0	0	0	65126.0
	C CFS	45.59371	0.04773	118.67315	0.06419	0	0	118.73734
REACH 3A - CORDELIA FOREBAY THRU BENICIA & VALLEJO TURNOUTS								
Solano County Water Agency	Q AF	40087.0	3.0	40087.0	3.0	0	0	40090.0
	C CFS	73.09096	0.00494	73.09096	0.00494	0	0	73.09590
TOTALS	Q AF	40087.0	3.0	40087.0	3.0	0	0	40090.0
	C CFS	73.09096	0.00494	73.09096	0.00494	0	0	73.09590
REACH 3B - CORDELIA FOREBAY THRU NAPA TURNOUT RESERVOIR								
Napa County Flood Control and Water Conservation District	Q AF	25000.0	7.0	25000.0	7.0	0	0	25007.0
	C CFS	45.58219	0.01152	45.58219	0.01152	0	0	45.59371
TOTALS	Q AF	25000.0	7.0	25000.0	7.0	0	0	25007.0
	C CFS	45.58219	0.01152	45.58219	0.01152	0	0	45.59371



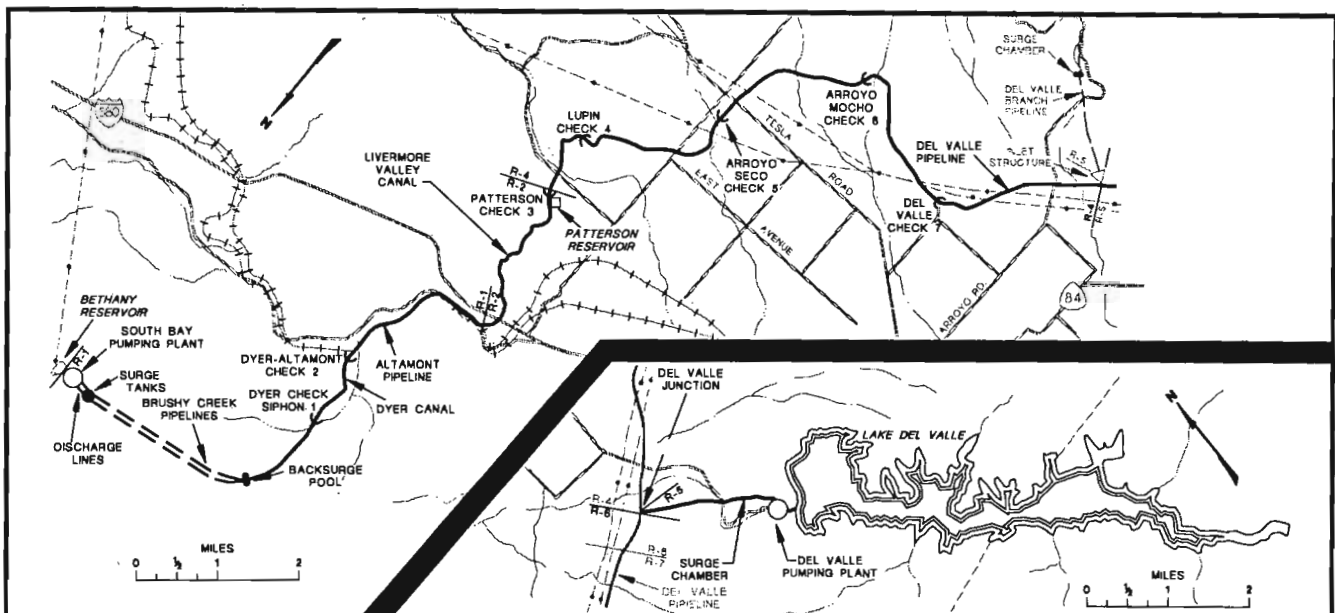
Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
PIPELINE, GRIZZLY VALLEY DAM TO PORTOLA RESERVOIR							
1.00000000 1.00000000		0 0	2700.0 8.00000	1.00000000 1.00000000		Q AF C CFS	Plumas County Flood Control and Water Conservation District
1.00000000 1.00000000		0 0	2700.0 8.00000	1.00000000 1.00000000		Q AF C CFS	TOTALS
BARKER SLOUGH THRU FAIRFIELD/VACAVILLE TURNOUT - REACH 1							
0.29668354 0.29667437 0.70331646 0.70332563	0.29667896	0	25021.4 45.61741 59315.6 128.14515	0.29668354 0.26252727 0.70331646 0.73747273	0.27960541	Q AF C CFS Q AF C CFS	Napa County Flood Control and Water Conservation District Solano County Water Agency
1.00000000 1.00000000	1.00000000	20.00000	84337.0 173.76257	1.00000000 1.00000000	1.00000000	Q AF C CFS	TOTALS
FAIRFIELD/VACAVILLE TURNOUT TO CORDELIA FOREBAY - REACH 2							
0.38414919 0.38414184 0.61585081 0.61585816	0.38414552	0	25018.1 45.61198 40107.9 73.12536	0.38414919 0.38414184 0.61585081 0.61585816	0.38414552	Q AF C CFS Q AF C CFS	Napa County Flood Control and Water Conservation District Solano County Water Agency
1.00000000 1.00000000	1.00000000	0	65126.0 118.73734	1.00000000 1.00000000	1.00000000	Q AF C CFS	TOTALS
CORDELIA FOREBAY THRU BENICIA & VALLEJO TURNOUTS - REACH 3A							
1.00000000 1.00000000	1.00000000	0	40090.0 73.09590	1.00000000 1.00000000	1.00000000	Q AF C CFS	Solano County Water Agency
1.00000000 1.00000000	1.00000000	0	40090.0 73.09590	1.00000000 1.00000000	1.00000000	Q AF C CFS	TOTALS
CORDELIA FOREBAY THRU NAPA TURNOUT RESERVOIR - REACH 3B							
1.00000000 1.00000000	1.00000000	0	25007.0 45.59371	1.00000000 1.00000000	1.00000000	Q AF C CFS	Napa County Flood Control and Water Conservation District
1.00000000 1.00000000	1.00000000	0	25007.0 45.59371	1.00000000 1.00000000	1.00000000	Q AF C CFS	TOTALS

TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)



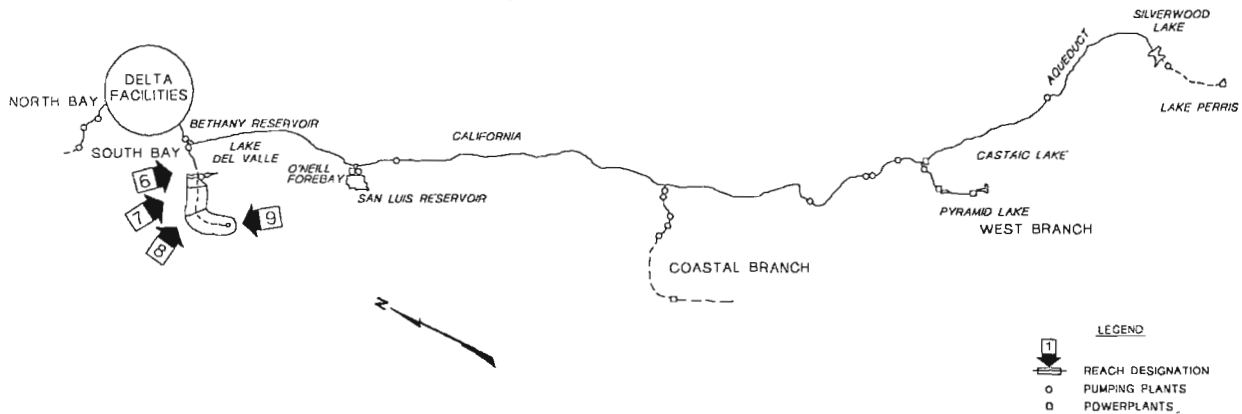
Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of			
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 1 - BETHANY RESERVOIR THRU ALTAMONT TURNOUT								
Santa Clara Valley Water District	Q AF	0	85.3	100000.0	1796.2	0	0	101796.2
	C CFS	0	0.11782	149.02296	2.48105	1.70240	0	153.20641
Alameda County Water District	Q AF	0	35.8	42000.0	712.5	0	0	42712.5
	C CFS	0	0.04945	62.60510	0.98416	0.71510	0	64.30436
Alameda County Flood Control and Water Conservation District, Zone 7	Q AF	0	39.2	46000.0	718.3	0	0	46718.3
	C CFS	0	0.05415	68.55222	0.99217	0.78300	0	70.32739
Future Contractor - South Bay	Q AF	0	19.7	22000.0	150.3	0	0	23503.0
	C CFS	0	0.02721	9.71132	2.07602	0.37450	0	12.16184
TOTALS	Q AF	0	180.0	210000.0	473.0	0	0	214730.0
	C CFS	0	0.24863	289.89160	6.53340	3.57500	0	300.00000
REACH 2 - ALTAMONT TURNOUT THRU PATTERSON RESERVOIR								
Santa Clara Valley Water District	Q AF	0	113.8	100000.0	1710.9	0	0	101710.9
	C CFS	0	0.15719	149.02296	2.36323	1.80550	0.01518	153.20687
Alameda County Water District	Q AF	0	47.7	42000.0	676.7	0	0	42676.7
	C CFS	0	0.06589	62.60510	0.93471	0.75840	0.00637	64.30458
Alameda County Flood Control and Water Conservation District, Zone 7	Q AF	17000.0	52.2	46000.0	679.1	0	0	46679.1
	C CFS	23.48174	0.07210	68.55222	0.93803	0.83050	0.00697	70.32772
Future Contractor - South Bay	Q AF	0	26.3	22000.0	1483.3	0	0	23483.3
	C CFS	0	0.03633	9.71132	2.04881	0.39720	0.00350	12.16083
TOTALS	Q AF	17000.0	240.0	210000.0	455.0	0	0	214550.0
	C CFS	23.48174	0.33151	289.89160	6.28478	3.79160	0.03202	300.00000
REACH 4 - PATTERSON RESERVOIR TO DEL VALLE JUNCTION								
Santa Clara Valley Water District	Q AF	0	417.1	100000.0	1597.1	0	0	101597.1
	C CFS	0	0.57613	149.02296	2.20604	2.11420	0.03542	153.37862
Alameda County Water District	Q AF	0	175.0	42000.0	629.0	0	0	42629.0
	C CFS	0	0.24172	62.60510	0.86882	0.88800	0.01486	64.37678
Alameda County Flood Control and Water Conservation District, Zone 7	Q AF	0	121.6	29000.0	626.9	0	1509.0	31135.9
	C CFS	0	0.16796	45.07048	0.86592	0.61310	23.49800	70.04750
Future Contractor - South Bay	Q AF	-17174.0	96.3	22000.0	1457.0	0	0	23457.0
	C CFS	-23.72208	0.13302	9.71132	2.01250	0.46510	0.00818	12.19710
TOTALS	Q AF	-17174.0	810.0	193000.0	4310.0	0	1509.0	198819.0
	C CFS	-23.72208	1.11884	266.40986	5.95328	4.08040	23.55646	300.00000
REACH 5 - DEL VALLE JUNCTION THRU LAKE DEL VALLE								
Santa Clara Valley Water District	Q AF	0.0	1180.0	100000.0	1180.0			
	C AF	9536.0	343.0	9536.0	343.0	0		9879.0
Alameda County Water District	Q AF	0.0	454.0	42000.0	454.0			
	C AF	3669.0	132.0	3669.0	132.0	0		3801.0
Alameda County Flood Control and Water Conservation District, Zone 7	Q AF	0.0	505.3	29000.0	505.3			
	C AF	4083.0	147.0	4083.0	147.0	0		4230.0
Future Contractor - South Bay	Q AF	12000.0	1360.7	39174.0	1360.7			
	C AF	10996.0	395.0	10996.0	395.0	0		11391.0
TOTALS	Q AF	12000.0	3500.0	210174.0	3500.0			
	C AF	28284.0	1017.0	28284.0	1017.0	0		29301.0



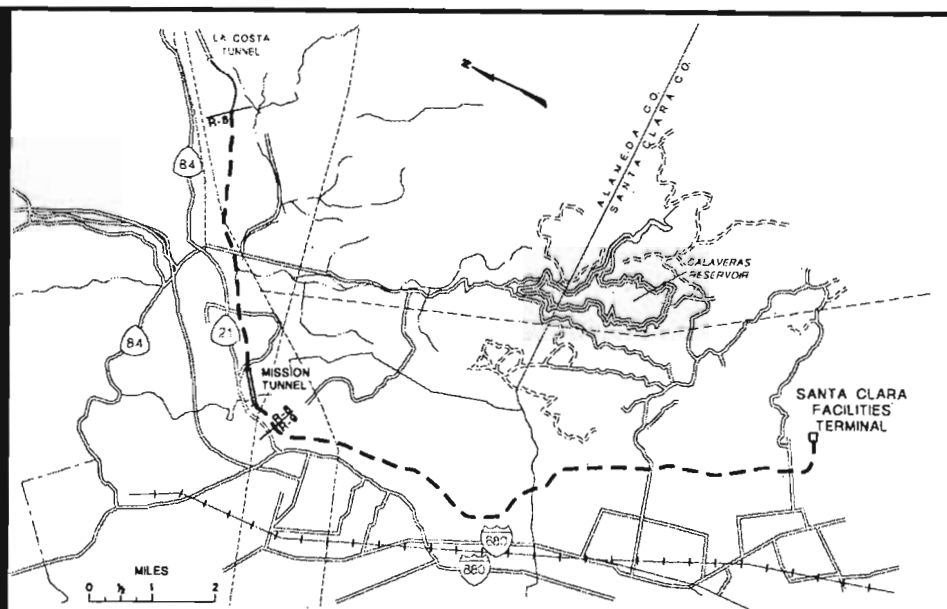
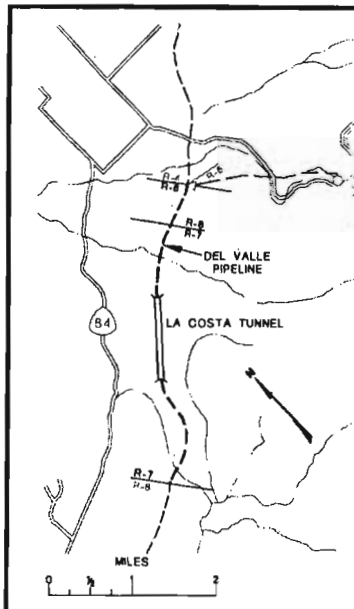


Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
BETHANY RESERVOIR THRU ALTAMONT TURNOUT - REACH 1							
0.47406604			101796.2	0.47406604		Q AF	Santa Clara Valley Water District
0.51068796	0.49237700	0	153.20641	0.51068796	0.49237700	C CFS	
0.19891259			42712.5	0.19891259		Q AF	Alameda County Water District
0.21434783	0.20663021	0	64.30436	0.21434783	0.20663021	C CFS	
0.21756764			46718.3	0.21756764		Q AF	Alameda County Flood Control and Water Conservation District, Zone 7
0.23442460	0.22599612	0	70.32739	0.23442460	0.22599612	C CFS	
0.10945373			23503.0	0.10945373		Q AF	Future Contractor - South Bay
0.04053961	0.07499667	0	12.16184	0.04053961	0.07499667	C CFS	
1.00000000			214730.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	300.00000	1.00000000	1.00000000	C CFS	
ALTAMONT TURNOUT THRU PATTERSON RESERVOIR - REACH 2							
0.47406618			101710.9	0.47406618		Q AF	Santa Clara Valley Water District
0.51068947	0.49237783	0	153.20687	0.51068947	0.49237783	C CFS	
0.19891261			42676.7	0.19891261		Q AF	Alameda County Water District
0.21434857	0.20663059	0	64.30458	0.21434857	0.20663059	C CFS	
0.21756747			46679.1	0.21756747		Q AF	Alameda County Flood Control and Water Conservation District, Zone 7
0.23442570	0.22599658	0	70.32772	0.23442570	0.22599658	C CFS	
0.10945374			23483.3	0.10945374		Q AF	Future Contractor - South Bay
0.04053626	0.07499500	0	12.16083	0.04053626	0.07499500	C CFS	
1.00000000			214550.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	300.00000	1.00000000	1.00000000	C CFS	
PATTERSON RESERVOIR TO DEL VALLE JUNCTION - REACH 4							
0.51100297			101597.1	0.51100297		Q AF	Santa Clara Valley Water District
0.51126201	0.51113249	0	153.37862	0.51126201	0.51113249	C CFS	
0.21441110			42629.0	0.21441110		Q AF	Alameda County Water District
0.21458924	0.21450017	0	64.37678	0.21458924	0.21450017	C CFS	
0.15660425			31135.9	0.15660425		Q AF	Alameda County Flood Control and Water Conservation District, Zone 7
0.23349165	0.19504795	0	70.04750	0.23349165	0.19504795	C CFS	
0.11798168			23457.0	0.11798168		Q AF	Future Contractor - South Bay
0.04065710	0.07931939	0	12.19710	0.04065710	0.07931939	C CFS	
1.00000000			198819.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	300.00000	1.00000000	1.00000000	C CFS	
DEL VALLE JUNCTION THRU LAKE DEL VALLE - REACH 5							
0.33715573	0.33715573		9879.0	0.33715573	0.33715573	Q AF	Santa Clara Valley Water District
						C AF	
0.12972254	0.12972254		3801.0	0.12972254	0.12972254	Q AF	Alameda County Water District
						C AF	
0.14436367	0.14436367		4230.0	0.14436367	0.14436367	Q AF	Alameda County Flood Control and Water Conservation District, Zone 7
						C AF	
0.38875806	0.38875806		11391.0	0.38875806	0.38875806	Q AF	Future Contractor - South Bay
						C AF	
1.00000000	1.00000000		29301.0	1.00000000	1.00000000	Q AF	TOTALS
						C AF	

TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)

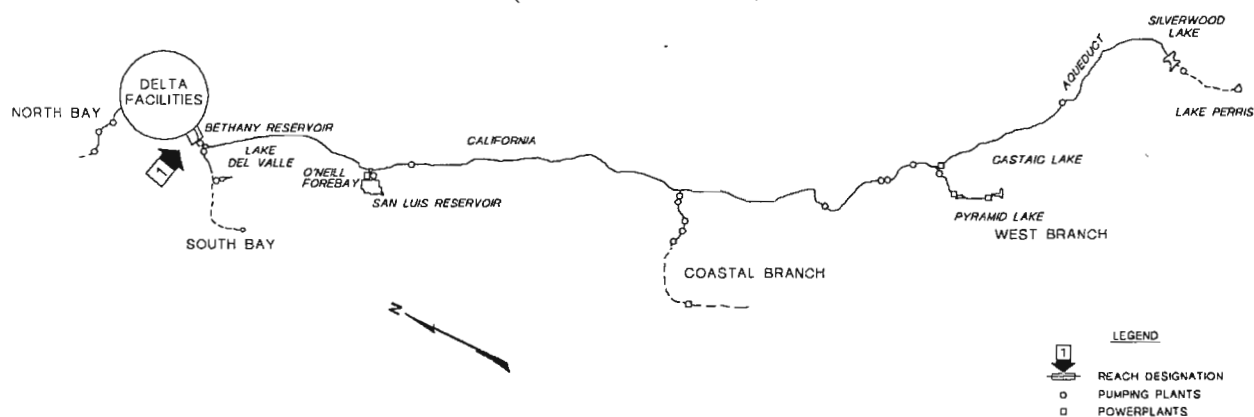


Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of			
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 6 - DEL VALLE JUNCTION THRU SOUTH LIVERMORE TURNOUT								
Santa Clara Valley Water District	Q AF	0	0	100000.0	0	0	0	100000.0
	C CFS	0	0	184.00000	0	0	0	184.00000
Alameda County Water District	Q AF	0	0	42000.0	0	0	0	42000.0
	C CFS	0	0	76.57808	0	0	0	76.57808
Alameda County Flood Control and Water Conservation District, Zone 7	Q AF	29000.0	0	29000.0	0	0	0	29000.0
	C CFS	52.87534	0	52.87534	0	0	0	52.87534
Future Contractor - South Bay	Q AF	2810.0	0	27174.0	0	0	0	27174.0
	C CFS	5.12344	0	49.54602	0	0	0	49.54602
TOTALS	Q AF	31810.0	0	198174.0	0	0	0	198174.0
	C CFS	57.99878	0	362.99944	0	0	0	362.99944
REACH 7 - SOUTH LIVERMORE TURNOUT THRU VALLECITOS TURNOUT								
Santa Clara Valley Water District	Q AF	0	0	100000.0	0	0	0	100000.0
	C CFS	0	0	184.00000	0	0	0	184.00000
Alameda County Water District	Q AF	3060.0	0	42000.0	0	0	0	42000.0
	C CFS	5.57926	0	76.57808	0	0	0	76.57808
Future Contractor - South Bay	Q AF	24364.0	0	24364.0	0	0	0	24364.0
	C CFS	44.42258	0	44.42258	0	0	0	44.42258
TOTALS	Q AF	27424.0	0	166364.0	0	0	0	166364.0
	C CFS	50.00184	0	305.00066	0	0	0	305.00066
REACH 8 - VALLECITOS TURNOUT THRU ALAMEDA-BAYSIDE TURNOUT								
Santa Clara Valley Water District	Q AF	0	0	100000.0	0	0	0	100000.0
	C CFS	0	0	184.00000	0	0	0	184.00000
Alameda County Water District	Q AF	38940.0	0	38940.0	0	0	0	38940.0
	C CFS	70.99882	0	70.99882	0	0	0	70.99882
TOTALS	Q AF	38940.0	0	138940.0	0	0	0	138940.0
	C CFS	70.99882	0	254.99882	0	0	0	254.99882
REACH 9 - ALAMEDA-BAYSIDE TURNOUT THRU SANTA CLARA TERMINAL FACILITIES								
Santa Clara Valley Water District	Q AF	100000.0	0	100000.0	0	0	0	100000.0
	C CFS	184.00000	0	184.00000	0	0	0	184.00000
TOTALS	Q AF	100000.0	0	100000.0	0	0	0	100000.0
	C CFS	184.00000	0	184.00000	0	0	0	184.00000

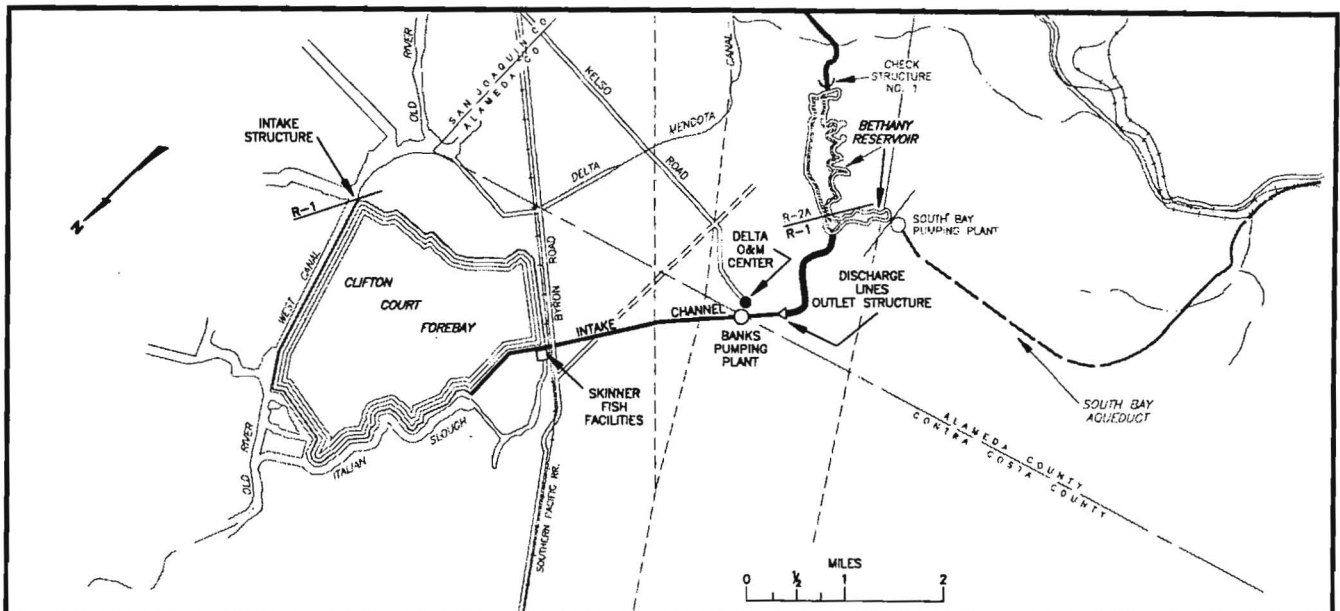


Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
DEL VALLE JUNCTION THRU SOUTH LIVERMORE TURNOUT - REACH 6							
0.50460706			100000.0	0.50460706		Q AF	Santa Clara Valley Water District
0.50688784	0.50574745	0	184.00000	0.50688784	0.50574745	C CFS	
0.21193497			42000.0	0.21193497		Q AF	Alameda County Water District
0.21095922	0.21144710	0	76.57808	0.21095922	0.21144710	C CFS	
0.14633605			29000.0	0.14633605		Q AF	Alameda County Flood Control and Water Conservation District, Zone 7
0.14566232	0.14599918	0	52.87534	0.14566232	0.14599918	C CFS	
0.13712192			27174.0	0.13712192		Q AF	Future Contractor - South Bay
0.13649062	0.13680627	0	49.54602	0.13649062	0.13680627	C CFS	
1.00000000			198174.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	362.99944	1.00000000	1.00000000	C CFS	
SOUTH LIVERMORE TURNOUT THRU VALLECITOS TURNOUT - REACH 7							
0.60109158			100000.0	0.60109158		Q AF	Santa Clara Valley Water District
0.60327738	0.60218448	0	184.00000	0.60327738	0.60218448	C CFS	
0.25245847			42000.0	0.25245847		Q AF	Alameda County Water District
0.25107513	0.25176680	0	76.57808	0.25107513	0.25176680	C CFS	
0.14644995			24364.0	0.14644995		Q AF	Future Contractor - South Bay
0.14564749	0.14604872	0	44.42258	0.14564749	0.14604872	C CFS	
1.00000000			166364.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	305.00066	1.00000000	1.00000000	C CFS	
VALLECITOS TURNOUT THRU ALAMEDA-BAYSIDE TURNOUT - REACH 8							
0.71973514			100000.0	0.71973514		Q AF	Santa Clara Valley Water District
0.72157197	0.72065355	0	184.00000	0.72157197	0.72065355	C CFS	
0.28026486			38940.0	0.28026486		Q AF	Alameda County Water District
0.27842803	0.27934645	0	70.99882	0.27842803	0.27934645	C CFS	
1.00000000			138940.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	254.99882	1.00000000	1.00000000	C CFS	
ALAMEDA-BAYSIDE TURNOUT THRU SANTA CLARA TERMINAL FACILITIES - REACH 9							
1.00000000			100000.0	1.00000000		Q AF	Santa Clara Valley Water District
1.00000000	1.00000000	0	184.00000	1.00000000	1.00000000	C CFS	
1.00000000			100000.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	184.00000	1.00000000	1.00000000	C CFS	

TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)

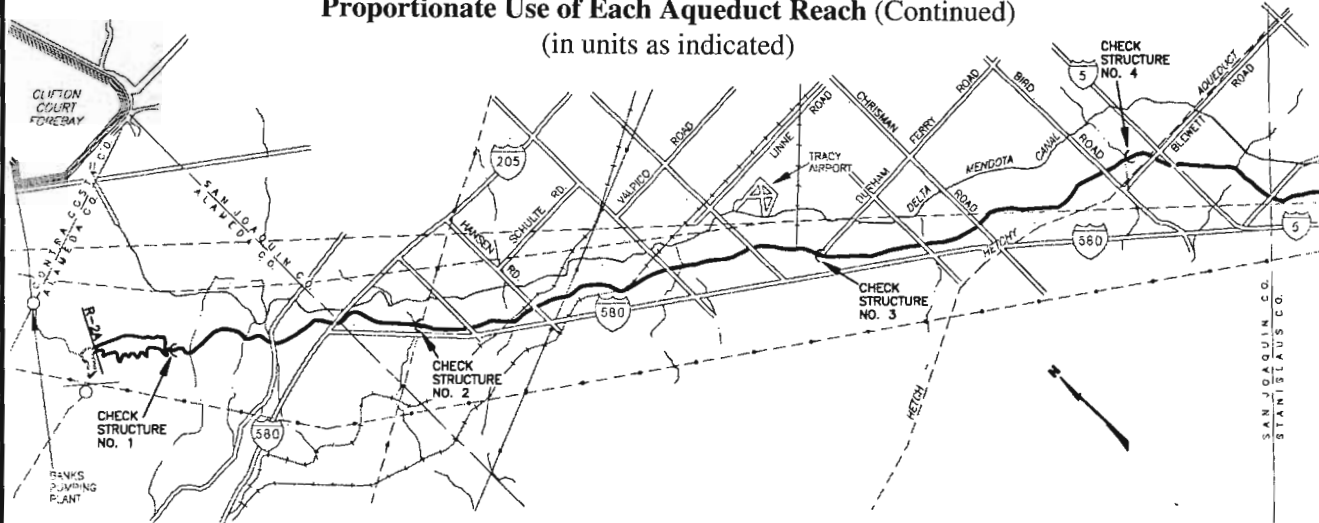


Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of Operational Losses	Scheduled Outages	Downstream Regulation	Subtotal
REACH 1 - DELTA THRU BETHANY RESERVOIR	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
The Metropolitan Water District of Southern California	Q AF	0	284.2	2011500.0	130159.9	0	0	2141659.9
	C CFS	0	0.46777	2863.14266	204.59593	184.57517	0	3252.31376
San Bernardino Valley Municipal Water District	Q AF	0	14.6	102600.0	7385.2	0	0	109985.2
	C CFS	0	0.02403	172.33413	11.95588	0.73809	0	185.02810
San Gabriel Valley Municipal Water District	Q AF	0	4.1	28800.0	2072.9	0	0	30872.9
	C CFS	0	0.00675	45.15128	3.35580	1.25670	0	49.76378
San Geronio Pass Water Agency	Q AF	0	2.5	17300.0	1245.5	0	0	18545.5
	C CFS	0	0.00411	29.05110	2.01635	0.12679	0	31.19424
Crestline-Lake Arrowhead Water Agency	Q AF	0	0.8	5800.0	417.5	0	0	6217.5
	C CFS	0	0.00132	9.75185	0.67590	0.03857	0	10.46632
Mojave Water Agency	Q AF	0	7.2	50800.0	3259.1	0	0	54059.1
	C CFS	0	0.01185	70.16895	5.36426	5.26267	0	80.79588
Desert Water Agency	Q AF	0	5.4	38100.0	2444.1	0	0	40544.1
	C CFS	0	0.00889	63.98091	4.02282	0.24980	0	68.25353
Coachella Valley County Water District	Q AF	0	3.3	23100.0	1481.9	0	0	24581.9
	C CFS	0	0.00543	38.80294	2.43911	0.14777	0	41.38982
Antelope Valley-East Kern Water Agency	Q AF	0	19.2	138400.0	6016.0	0	0	144416.0
	C CFS	0	0.03160	191.16896	9.90192	14.33767	0	215.40855
Little Rock Creek Irrigation District	Q AF	0	0.3	2300.0	115.8	0	0	2415.8
	C CFS	0	0.00049	3.17694	0.19060	0.23827	0	3.60581
Palmdale Water District	Q AF	0	2.4	17300.0	834.1	0	0	18134.1
	C CFS	0	0.00395	23.89612	1.37287	1.79221	0	27.06120
Ventura County Flood Control District	Q AF	0	2.8	20000.0	1094.3	0	0	21094.3
	C CFS	0	0.00461	27.62557	1.71944	2.10390	0	31.44891
Castaic Lake Water Agency	Q AF	0	7.6	54200.0	3054.5	0	0	57254.5
	C CFS	0	0.01251	95.21429	4.80612	5.70156	0	105.72197
Kern County Water Agency (Municipal and Industrial)	Q AF	0	16.3	119600.0	3398.4	0	0	122998.4
	C CFS	0	0.02683	218.06521	5.59353	0	0	223.65874
Kern County Water Agency (Agriculture)	Q AF	0	140.8	1033800.0	27628.3	0	0	1061428.3
	C CFS	0	0.23175	3058.92860	45.47429	0	0	3104.40289
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	6.4	45486.0	2848.6	0	0	48334.6
	C CFS	0	0.01053	62.82884	4.37197	4.83610	0	72.03691
San Luis Obispo County Flood Control and Water Conservation District	Q AF	0	3.5	25000.0	1199.4	0	0	26199.4
	C CFS	0	0.00576	34.53197	1.89378	2.62135	0	39.04710
Dudley Ridge Water District	Q AF	0	7.8	57700.0	1060.9	0	0	58760.9
	C CFS	0	0.01284	172.15151	1.74617	0	0	173.89768
Tulare Lake Basin Water Storage District	Q AF	0	16.0	118500.0	2069.9	0	0	120569.9
	C CFS	0	0.02633	353.55206	3.40691	0	0	356.95897
Future Contractor - San Joaquin	Q AF	0	1.7	12214.0	310.6	0	0	12524.6
	C CFS	0	0.00280	16.87094	0.51123	1.26532	0	18.64749
Empire West Side Irrigation District	Q AF	0	0.4	3000.0	49.8	0	0	3049.8
	C CFS	0	0.00066	8.95069	0.08197	0	0	9.03266
County of Kings	Q AF	0	0.5	4000.0	66.5	0	0	4066.5
	C CFS	0	0.00082	7.29315	0.10945	0	0	7.40260
Oak Flat Water District	Q AF	0	0.7	5700.0	30.3	0	0	5730.3
	C CFS	0	0.00115	17.00630	0.04987	0	0	17.05617
Santa Clara Valley Water District	Q AF	0	13.5	100000.0	1809.7	0	0	101809.7
	C CFS	0	0.02222	149.02296	2.50327	1.70240	0	153.22863
Alameda County Water District	Q AF	0	5.7	42000.0	718.2	0	0	42718.2
	C CFS	0	0.00938	62.60510	0.99354	0.71510	0	64.31374
Alameda County Flood Control and Water Conservation District, Zone 7	Q AF	0	6.2	46000.0	724.5	0	0	46724.5
	C CFS	0	0.01020	68.55222	1.00238	0.78300	0	70.33760
Future Contractor - South Bay	Q AF	0	3.1	22000.0	1506.1	0	0	23506.1
	C CFS	0	0.00510	9.71132	2.08117	0.37450	0	12.16699
<b>TOTALS</b>	Q AF	0	577.0	4145200.0	203002.0	0	0	4348202.0
	C CFS	0	0.94970	7873.53657	322.23654	228.86694	0	8424.64006



Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
DELTA THRU BETHANY RESERVOIR - REACH 1							
0.49253919			2141659.9	0.49253919		Q AF	The Metropolitan Water District of Southern California
0.38604780	0.43929350	0	3252.31376	0.38604780	0.43929350	C CFS	San Bernardino Valley Municipal Water District
0.02529441	0.02362857	0	185.02810	0.02529441	0.02362857	C CFS	San Gabriel Valley Municipal Water District
0.00710015		0	30872.9	0.00710015		Q AF	San Geronimo Pass Water Agency
0.00590693	0.00650354	0	49.76378	0.00590693	0.00650354	C CFS	
0.00426510		0	18545.5	0.00426510		Q AF	
0.00370274	0.00398392	0	31.19424	0.00370274	0.00398392	C CFS	
0.00142990		0	6217.5	0.00142990		Q AF	Crestline-Lake Arrowhead Water Agency
0.00124235	0.00133612	0	10.46632	0.00124235	0.00133612	C CFS	
0.01243252		0	54059.1	0.01243252		Q AF	Mojave Water Agency
0.00959042	0.01101147	0	80.79588	0.00959042	0.01101147	C CFS	
0.00932434		0	40544.1	0.00932434		Q AF	Desert Water Agency
0.00810166	0.00871300	0	68.25353	0.00810166	0.00871300	C CFS	
0.00565335		0	24581.9	0.00565335		Q AF	Coachella Valley County Water District
0.00491295	0.00528315	0	41.38982	0.00491295	0.00528315	C CFS	
0.03321281		0	144416.0	0.03321281		Q AF	Antelope Valley-East Kern Water Agency
0.02566887	0.02939084	0	215.40855	0.02566887	0.02939084	C CFS	
0.00055559		0	2415.8	0.00055559		Q AF	Little Rock Creek Irrigation District
0.00042801	0.00049180	0	3.60581	0.00042801	0.00049180	C CFS	
0.00417048		0	18134.1	0.00417048		Q AF	Palmdale Water District
0.00321215	0.00369131	0	27.06120	0.00321215	0.00369131	C CFS	
0.00485127		0	21094.3	0.00485127		Q AF	Ventura County Flood Control District
0.00373297	0.00429212	0	31.44891	0.00373297	0.00429212	C CFS	
0.01316740		0	57254.5	0.01316740		Q AF	Castaic Lake Water Agency
0.01254914	0.01285827	0	105.72197	0.01254914	0.01285827	C CFS	
0.02828719		0	122998.4	0.02828719		Q AF	Kern County Water Agency (Municipal and Industrial)
0.02654817	0.02741768	0	223.65874	0.02654817	0.02741768	C CFS	
0.24410740		0	1061428.3	0.24410740		Q AF	Kern County Water Agency (Agriculture)
0.36849086	0.30629913	0	3104.40289	0.36849086	0.30629913	C CFS	
0.01111600		0	48334.6	0.01111600		Q AF	Santa Barbara County Flood Control and Water Conservation District
0.00855074	0.00983337	0	72.03691	0.00855074	0.00983337	C CFS	
0.00602534		0	26199.4	0.00602534		Q AF	San Luis Obispo County Flood Control and Water Conservation District
0.00463487	0.00533010	0	39.04710	0.00463487	0.00533010	C CFS	
0.01351384		0	58760.9	0.01351384		Q AF	Dudley Ridge Water District
0.02064156	0.01707770	0	173.89768	0.02064156	0.01707770	C CFS	
0.02772868		0	120569.9	0.02772868		Q AF	Tulare Lake Basin Water Storage District
0.04237083	0.03504975	0	356.95897	0.04237083	0.03504975	C CFS	
0.00288041		0	12524.6	0.00288041		Q AF	Future Contractor - San Joaquin
0.00221345	0.00254693	0	18.64749	0.00221345	0.00254693	C CFS	
0.00070139		0	3049.8	0.00070139		Q AF	Empire West Side Irrigation District
0.00107217	0.00088678	0	9.03266	0.00107217	0.00088678	C CFS	
0.00093521		0	4066.5	0.00093521		Q AF	County of Kings
0.00087868	0.00090695	0	7.40260	0.00087868	0.00090695	C CFS	
0.00131785		0	5730.3	0.00131785		Q AF	Oak Flat Water District
0.00202456	0.00167121	0	17.05617	0.00202456	0.00167121	C CFS	
0.02341421		0	101809.7	0.02341421		Q AF	Santa Clara Valley Water District
0.01818815	0.02080118	0	153.22863	0.01818815	0.02080118	C CFS	
0.00982434		0	42718.2	0.00982434		Q AF	Alameda County Water District
0.00763400	0.00872917	0	64.31374	0.00763400	0.00872917	C CFS	
0.01074570		0	46724.5	0.01074570		Q AF	Alameda County Flood Control and Water Conservation District, Zone 7
0.00834903	0.00954737	0	70.33760	0.00834903	0.00954737	C CFS	
0.00540593		0	23506.1	0.00540593		Q AF	Future Contractor - South Bay
0.00144421	0.00342507	0	12.16699	0.00144421	0.00342507	C CFS	
1.00000000			4348202.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	8424.64006	1.00000000	1.00000000	C CFS	

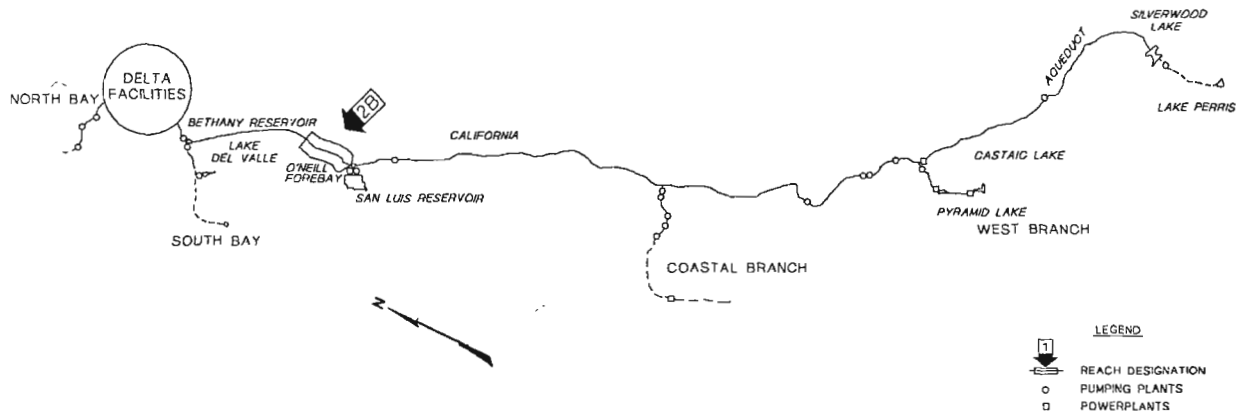
TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
 (in units as indicated)



Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>REACH 2A - BETHANY RESERVOIR TO ORESTIMBA CREEK</b>								
The Metropolitan Water District of Southern California	Q AF	0	11065.2	2011500.0	129875.7	0	0	2141375.7
	C CFS	0	18.21256	2863.14266	204.12816	184.57517	0	3251.84599
San Bernardino Valley Municipal Water District	Q AF	0	568.3	102600.0	7370.6	0	0	109970.6
	C CFS	0	0.93538	172.33413	11.93185	0.73809	0	185.00407
San Gabriel Valley Municipal Water District	Q AF	0	159.5	28800.0	2068.8	0	0	30868.8
	C CFS	0	0.26253	45.15128	3.34905	1.25670	0	49.75703
San Geronimo Pass Water Agency	Q AF	0	95.8	17300.0	1243.0	0	0	18543.0
	C CFS	0	0.15768	29.05110	2.01223	0.12679	0	31.19012
Crestline-Lake Arrowhead Water Agency	Q AF	0	32.1	5800.0	416.7	0	0	6216.7
	C CFS	0	0.05283	9.75185	0.67458	0.03857	0	10.46500
Mojave Water Agency	Q AF	0	279.3	50800.0	3251.9	0	0	54051.9
	C CFS	0	0.45971	70.16895	5.35240	5.26267	0	80.78402
Desert Water Agency	Q AF	0	209.5	38100.0	2438.7	0	0	40538.7
	C CFS	0	0.34482	63.98091	4.01393	0.24980	0	68.24464
Coachella Valley County Water District	Q AF	0	127.0	23100.0	1478.6	0	0	24578.6
	C CFS	0	0.20903	38.80294	2.43367	0.14777	0	41.38438
Antelope Valley-East Kern Water Agency	Q AF	0	746.1	138400.0	5996.8	0	0	144396.8
	C CFS	0	1.22803	191.16896	9.87032	14.33767	0	215.37695
Little Rock Creek Irrigation District	Q AF	0	12.5	2300.0	115.5	0	0	2415.5
	C CFS	0	0.02057	3.17694	0.19011	0.23827	0	3.60532
Palmdale Water District	Q AF	0	93.7	17300.0	831.7	0	0	18131.7
	C CFS	0	0.15422	23.89612	1.36892	1.79221	0	27.05725
Ventura County Flood Control District	Q AF	0	109.0	20000.0	1091.5	0	0	21091.5
	C CFS	0	0.17941	27.62557	1.71484	2.10390	0	31.44431
Castaic Lake Water Agency	Q AF	0	295.8	54200.0	3046.9	0	0	57246.9
	C CFS	0	0.48687	95.21429	4.79361	5.70156	0	105.70946
Kern County Water Agency (Municipal and Industrial)	Q AF	0	635.5	119600.0	3382.1	0	0	122982.1
	C CFS	0	1.04599	218.06521	5.56671	0	0	223.63192
Kern County Water Agency (Agriculture)	Q AF	0	5484.0	1033800.0	27487.5	0	0	1061287.5
	C CFS	0	9.02629	3058.92860	45.24254	0	0	3104.17114
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	249.7	45486.0	2842.2	0	0	48328.2
	C CFS	0	0.41099	62.82884	4.36144	4.83610	0	72.02638
San Luis Obispo County Flood Control and Water Conservation District	Q AF	0	135.4	25000.0	1195.9	0	0	26195.9
	C CFS	0	0.22286	34.53197	1.88802	2.62135	0	39.04134
Dudley Ridge Water District	Q AF	0	303.6	57700.0	1053.1	0	0	58753.1
	C CFS	0	0.4997	172.15151	1.73333	0	0	173.88484
Tulare Lake Basin Water Storage District	Q AF	0	622.9	118500.0	2053.9	0	0	120553.9
	C CFS	0	1.02525	353.55206	3.38058	0	0	356.93264
Future Contractor - San Joaquin	Q AF	0	64.7	12214.0	308.9	0	0	12522.9
	C CFS	0	0.10649	16.87094	0.50843	1.26532	0	18.64469
Empire West Side Irrigation District	Q AF	0	49.4	15.8	0	0	0	3049.4
	C CFS	0	0.02601	8.95069	0.08131	0	0	9.03200
County of Kings	Q AF	0	21.0	4000.0	66.0	0	0	4066.0
	C CFS	0	0.03456	7.29315	0.10863	0	0	7.40178
Oak Flat Water District	Q AF	0	29.6	5700.0	29.6	0	0	5729.6
	C CFS	18	0.04872	17.00630	0.04872	0	0	17.05502
<b>TOTALS</b>	Q AF	0	21356.0	3935200.0	197695.0	0	0	4132895.0
	C CFS	0	35.15051	7583.64497	314.75339	225.29194	0	8123.69030

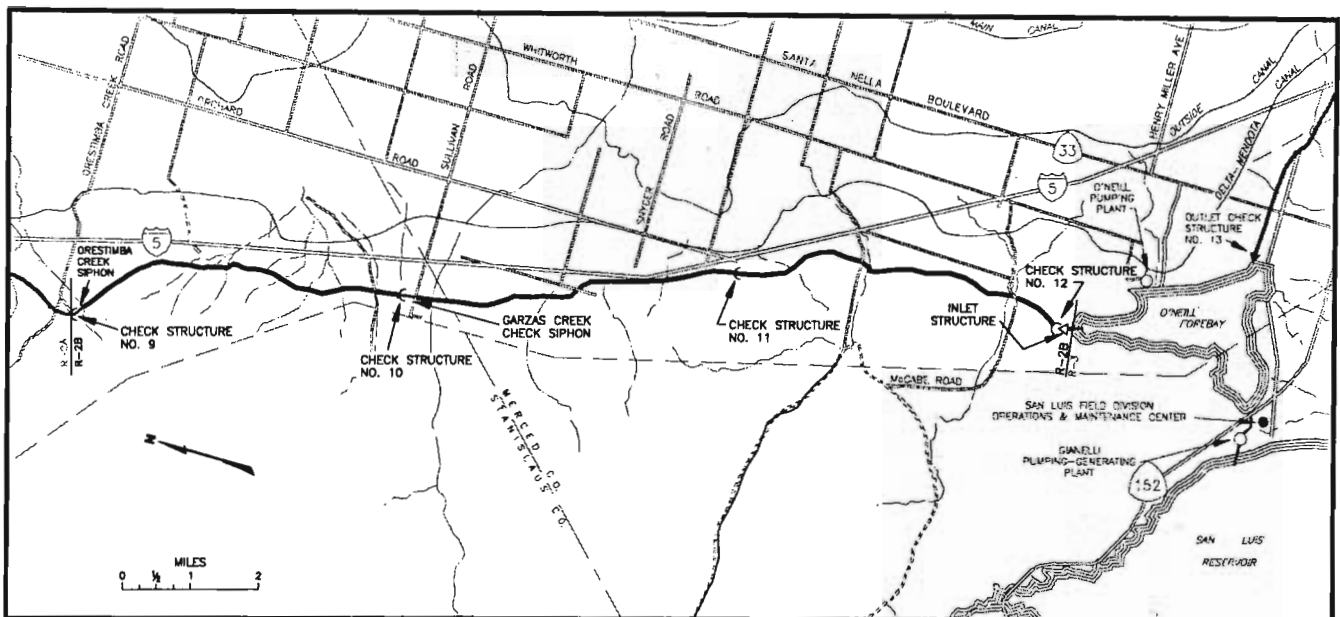


**TABLES B-1 & B-2**  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)



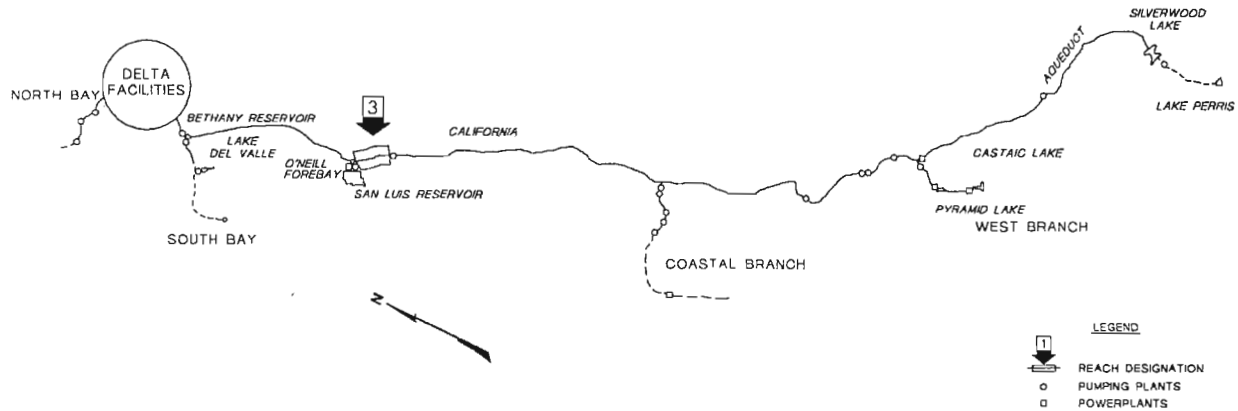
Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of			
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 2B - ORESTIMBA CREEK TO O'NEILL FOREBAY								
The Metropolitan Water District of Southern California	Q AF	0	3499.1	2011500	118810.5	0	0	2130310.5
	C CFS	0	5.75928	2863.14266	185.91560	184.57517	0	3233.63343
San Bernardino Valley Municipal Water District	Q AF	0	179.7	102600.0	6802.3	0	0	109402.3
	C CFS	0	0.29577	172.33413	10.99647	0.73809	0	184.06869
San Gabriel Valley Municipal Water District	Q AF	0	50.4	28800.0	1909.3	0	0	30709.3
	C CFS	0	0.08295	45.15128	3.08653	1.25670	0	49.49451
San Geronio Pass Water Agency	Q AF	0	30.3	17300.0	1147.2	0	0	18447.2
	C CFS	0	0.04987	29.05110	1.85455	0.12679	0	31.03244
Crestline-Lake Arrowhead Water Agency	Q AF	0	10.2	5800.0	384.6	0	0	6184.6
	C CFS	0	0.01679	9.75185	0.62175	0.03857	0	10.41217
Mojave Water Agency	Q AF	0	88.3	50800.0	2972.6	0	0	53772.6
	C CFS	0	0.14534	70.16895	4.8927	5.26267	0	80.32432
Desert Water Agency	Q AF	0	66.2	38100.0	2229.2	0	0	40329.2
	C CFS	0	0.10896	63.98091	3.66911	0.24980	0	67.89982
Coachella Valley County Water District	Q AF	0	40.2	23100.0	1351.6	0	0	24451.6
	C CFS	0	0.06617	38.80294	2.22464	0.14777	0	41.17535
Antelope Valley-East Kern Water Agency	Q AF	0	236.0	138400.0	5250.7	0	0	143650.7
	C CFS	0	0.38844	191.16896	8.64229	14.33767	0	214.14892
Littlerock Creek Irrigation District	Q AF	0	3.9	2300.0	103.0	0	0	2403.0
	C CFS	0	0.00642	3.17694	0.16953	0.23827	0	3.58474
Palmdale Water District	Q AF	0	29.6	17300.0	738.0	0	0	18038.0
	C CFS	0	0.04872	23.89612	1.21470	1.79221	0	26.90303
Ventura County Flood Control District	Q AF	0	34.5	20000.0	982.5	0	0	20982.5
	C CFS	0	0.05678	27.62557	1.53543	2.10390	0	31.26490
Castaic Lake Water Agency	Q AF	0	93.5	54200.0	2751.1	0	0	56951.1
	C CFS	0	0.15389	95.21429	4.30674	5.70156	0	105.22259
Kern County Water Agency (Municipal and Industrial)	Q AF	0	201.0	119600.0	2746.6	0	0	122346.6
	C CFS	0	0.33083	218.06521	4.52072	0	0	222.58593
Kern County Water Agency (Agriculture)	Q AF	0	1734.2	1033800.0	22003.5	0	0	1055803.5
	C CFS	0	2.85437	3058.92860	36.21626	0	0	3095.14486
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	79.0	45486.0	2592.5	0	0	48078.5
	C CFS	0	0.13003	62.82884	3.95045	4.83610	0	71.61539
San Luis Obispo County Flood Control and Water Conservation District	Q AF	0	42.8	25000.0	1060.5	0	0	26060.5
	C CFS	0	0.07045	34.53197	1.66516	2.62135	0	38.81848
Dudley Ridge Water District	Q AF	0	96.0	57700.0	749.5	0	0	58449.5
	C CFS	0	0.15801	172.15151	1.23363	0	0	173.38514
Tulare Lake Basin Water Storage District	Q AF	0	197.0	118500.0	1431.0	0	0	119931.0
	C CFS	0	0.32425	353.55206	2.35533	0	0	355.90739
Future Contractor - San Joaquin	Q AF	0	20.5	12214.0	244.2	0	0	12458.2
	C CFS	0	0.03374	16.87094	0.40194	1.26532	0	18.53820
Empire West Side Irrigation District	Q AF	0	5.0	3000.0	33.6	0	0	3033.6
	C CFS	0	0.00823	8.95069	0.05530	0	0	9.00599
County of Kings	Q AF	0	6.6	4000.0	45.0	0	0	4045.0
	C CFS	0	0.01086	7.29315	0.07407	0	0	7.36722
TOTALS	Q AF	0	6744.0	3929500.0	176339.0	0	0	4105839.0
	C CFS	0	11.10016	7566.63867	279.60287	225.29194	0	8071.53349





Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
ORESTIMBA CREEK TO O'NEILL FOREBAY - REACH 2B							
0.51884901			2130310.5	0.51884901		Q AF	The Metropolitan Water District of Southern California
0.40062194	0.45973548	0	3233.63343	0.40062194	0.45973548	C CFS	San Bernardino Valley Municipal Water District
0.02664554			109402.3	0.02664554		Q AF	San Gabriel Valley Municipal Water District
0.02280467	0.02472511	0	184.06869	0.02280467	0.02472511	C CFS	San Geronio Pass Water Agency
0.00747942			30709.3	0.00747942		Q AF	Crestline-Lake Arrowhead Water Agency
0.00613198	0.00680570	0	49.49451	0.00613198	0.00680570	C CFS	Mojave Water Agency
0.00449292			18447.2	0.00449292		Q AF	Desert Water Agency
0.00384468	0.00416880	0	31.03244	0.00384468	0.00416880	C CFS	Coachella Valley County Water District
0.00150629			6184.6	0.00150629		Q AF	Antelope Valley-East Kern Water Agency
0.00128999	0.00139814	0	10.41217	0.00128999	0.00139814	C CFS	Littlerock Creek Irrigation District
0.01309662			53772.6	0.01309662		Q AF	Palmdale Water District
0.00995156	0.01152409	0	80.32432	0.00995156	0.01152409	C CFS	Ventura County Flood Control District
0.00982240			40329.2	0.00982240		Q AF	Castaic Lake Water Agency
0.00841226	0.00911733	0	67.89982	0.00841226	0.00911733	C CFS	Kern County Water Agency (Municipal and Industrial)
0.00595532			24451.6	0.00595532		Q AF	Kern County Water Agency (Agriculture)
0.00510130	0.00552831	0	41.17535	0.00510130	0.00552831	C CFS	Santa Barbara County Flood Control and Water Conservation District
0.03498693			143650.7	0.03498693		Q AF	San Luis Obispo County Flood Control and Water Conservation District
0.02653138	0.03075915	0	214.14892	0.02653138	0.03075915	C CFS	Dudley Ridge Water District
0.00058526			2403.0	0.00058526		Q AF	Tulare Lake Basin Water Storage District
0.00044412	0.00051469	0	3.58474	0.00044412	0.00051469	C CFS	Future Contractor - San Joaquin
0.00439326			18038.0	0.00439326		Q AF	Empire West Side Irrigation District
0.00333307	0.00386317	0	26.90303	0.00333307	0.00386317	C CFS	County of Kings
0.00511041			20982.5	0.00511041		Q AF	
0.00387348	0.00449194	0	31.26490	0.00387348	0.00449194	C CFS	
0.01387076			56951.1	0.01387076		Q AF	
0.01303626	0.01345351	0	105.22259	0.01303626	0.01345351	C CFS	
0.02979820			122346.6	0.02979820		Q AF	
0.02757666	0.02868743	0	222.58593	0.02757666	0.02868743	C CFS	
0.25714683			1055803.5	0.25714683		Q AF	
0.38346429	0.32030556	0	3095.14486	0.38346429	0.32030556	C CFS	
0.01170979			48078.5	0.01170979		Q AF	
0.00887259	0.01029119	0	71.61539	0.00887259	0.01029119	C CFS	
0.00634718			26060.5	0.00634718		Q AF	
0.00480931	0.00557824	0	38.81848	0.00480931	0.00557824	C CFS	
0.01423570			58449.5	0.01423570		Q AF	
0.02148106	0.01785838	0	173.38514	0.02148106	0.01785838	C CFS	
0.02920987			119931.0	0.02920987		Q AF	
0.04409415	0.03665201	0	355.90739	0.04409415	0.03665201	C CFS	
0.00303426			12458.2	0.00303426		Q AF	
0.00229674	0.00266550	0	18.53820	0.00229674	0.00266550	C CFS	
0.00073885			3033.6	0.00073885		Q AF	
0.00111577	0.00092731	0	9.00599	0.00111577	0.00092731	C CFS	
0.00098518			4045.0	0.00098518		Q AF	
0.00091274	0.00094896	0	7.36722	0.00091274	0.00094896	C CFS	
1.00000000			4105839.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	8071.53349	1.00000000	1.00000000	C CFS	

TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)



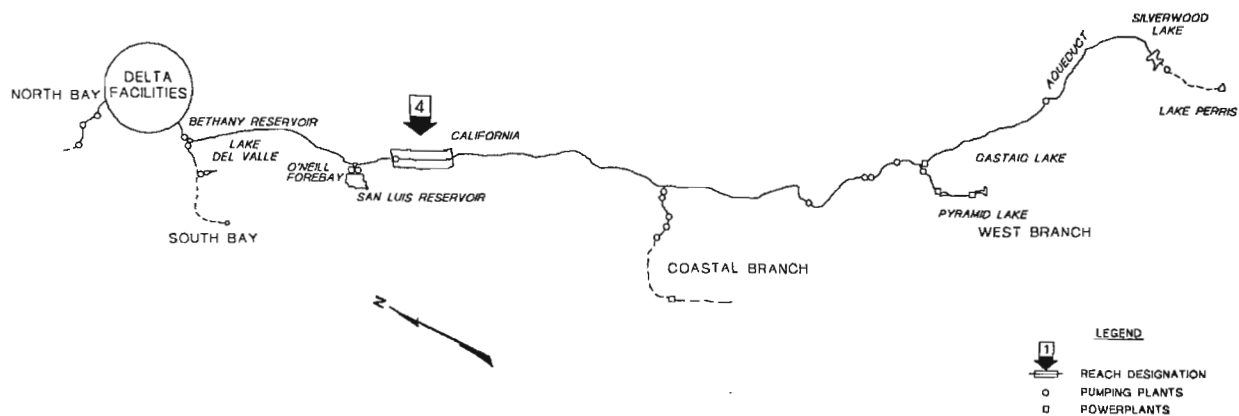
Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of			Subtotal
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 3 - O'NEILL FOREBAY TO DOS AMIGOS PUMPING PLANT								
The Metropolitan Water District of Southern California	Q AF	0	3668.3	2011500.0	115311.4	0	0	2126811.4
	C CFS	0	6.03777	2863.14266	180.15632	184.57517	0	3227.87415
San Bernardino Valley Municipal Water District	Q AF	0	188.4	102600.0	6622.6	0	0	109222.6
	C CFS	0	0.31009	172.33413	10.70070	0.73809	0	183.77292
San Gabriel Valley Municipal Water District	Q AF	0	52.9	28800.0	1858.9	0	0	30658.9
	C CFS	0	0.08707	45.15128	3.00357	1.25670	0	49.41155
San Geronio Pass Water Agency	Q AF	0	31.8	17300.0	1116.9	0	0	18416.9
	C CFS	0	0.05234	29.05110	1.80468	0.12679	0	30.98257
Crestline-Lake Arrowhead Water Agency	Q AF	0	10.6	5800.0	374.4	0	0	6174.4
	C CFS	0	0.01745	9.75185	0.60496	0.03857	0	10.39538
Mojave Water Agency	Q AF	0	92.6	50800.0	2884.3	0	0	53684.3
	C CFS	0	0.15241	70.16895	4.74736	5.26267	0	80.17898
Desert Water Agency	Q AF	0	69.4	38100.0	2163.0	0	0	40263.0
	C CFS	0	0.11423	63.98091	3.56015	0.24980	0	67.79086
Coachella Valley County Water District	Q AF	0	42.1	23100.0	1311.4	0	0	24411.4
	C CFS	0	0.06929	38.80294	2.15847	0.14777	0	41.10918
Antelope Valley-East Kern Water Agency	Q AF	0	247.4	138400.0	5014.7	0	0	143414.7
	C CFS	0	0.40720	191.16896	8.25385	14.33767	0	213.76048
Littlerock Creek Irrigation District	Q AF	0	4.1	2300.0	99.1	0	0	2399.1
	C CFS	0	0.00675	3.17694	0.16311	0.23827	0	3.57832
Palmdale Water District	Q AF	0	31.1	17300.0	708.4	0	0	18008.4
	C CFS	0	0.05119	23.89612	1.16598	1.79221	0	26.85431
Ventura County Flood Control District	Q AF	0	36.1	20000.0	948.0	0	0	20948.0
	C CFS	0	0.05942	27.62557	1.47864	2.10390	0	31.20811
Castaic Lake Water Agency	Q AF	0	98.1	54200.0	2657.6	0	0	56857.6
	C CFS	0	0.16147	95.21429	4.15285	5.70156	0	105.06870
Kern County Water Agency (Municipal and Industrial)	Q AF	0	210.7	119600.0	2545.6	0	0	122145.6
	C CFS	0	0.3468	218.06521	4.18988	0	0	222.25509
Kern County Water Agency (Agriculture)	Q AF	0	1818.0	1033800.0	20269.3	0	0	1054069.3
	C CFS	0	2.99230	3058.92860	33.36188	0	0	3092.29048
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	82.8	45486.0	2513.5	0	0	47999.5
	C CFS	0	0.13628	62.82884	3.82042	4.83610	0	71.48536
San Luis Obispo County Flood Control and Water Conservation District	Q AF	0	44.9	25000.0	1017.7	0	0	26017.7
	C CFS	0	0.07390	34.53197	1.59472	2.62135	0	38.74804
Dudley Ridge Water District	Q AF	0	100.6	57700.0	653.5	0	0	58353.5
	C CFS	0	0.16558	172.15151	1.07562	0	0	173.22713
Tulare Lake Basin Water Storage District	Q AF	0	206.5	118500.0	1234.0	0	0	119734.0
	C CFS	0	0.33988	353.55206	2.03108	0	0	355.58314
Future Contractor - San Joaquin	Q AF	0	21.4	12214.0	223.7	0	0	12437.7
	C CFS	0	0.03522	16.87094	0.36819	1.26532	0	18.50445
Empire West Side Irrigation District	Q AF	0	5.2	3000.0	28.6	0	0	3028.6
	C CFS	0	0.00856	8.95069	0.04707	0	0	8.99776
County of Kings	Q AF	0	7.0	4000.0	38.4	0	0	4038.4
	C CFS	0	0.01152	7.29315	0.06320	0	0	7.35635
TOTALS	Q AF	0	7070.0	3929500.0	169595.0	0	0	4099095.0
	C CFS	0	11.63674	7566.63867	268.50271	225.29194	0	8060.43333

Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		

O'NEILL FOREBAY TO DOS AMIGOS PUMPING PLANT - REACH 3

0.51884901			2126811.4	0.51884901		Q AF	The Metropolitan Water District
0.40045913	0.45965407	0	3227.87415	0.40045913	0.45965407	C CFS	of Southern California
0.02664554			109222.6	0.02664554		Q AF	San Bernardino Valley Municipal
0.02279938	0.02472246	0	183.77292	0.02279938	0.02472246	C CFS	Water District
0.00747943			30658.9	0.00747943		Q AF	San Gabriel Valley Municipal
0.00613014	0.00680478	0	49.41155	0.00613014	0.00680478	C CFS	Water District
0.00449292			18416.9	0.00449292		Q AF	San Geronio Pass Water Agency
0.00384378	0.00416835	0	30.98257	0.00384378	0.00416835	C CFS	
0.00150628			6174.4	0.00150628		Q AF	Crestline-Lake Arrowhead Water Agency
0.00128968	0.00139798	0	10.39538	0.00128968	0.00139798	C CFS	
0.01309662			53684.3	0.01309662		Q AF	Mojave Water Agency
0.00994723	0.01152193	0	80.17898	0.00994723	0.01152193	C CFS	
0.00982241			40263.0	0.00982241		Q AF	Desert Water Agency
0.00841032	0.00911637	0	67.79086	0.00841032	0.00911637	C CFS	
0.00595532			24411.4	0.00595532		Q AF	Coachella Valley County Water District
0.00510012	0.00552772	0	41.10918	0.00510012	0.00552772	C CFS	
0.03498692			143414.7	0.03498692		Q AF	Antelope Valley-East Kern Water Agency
0.02651973	0.03075332	0	213.76048	0.02651973	0.03075332	C CFS	
0.00058528			2399.1	0.00058528		Q AF	Littlerock Creek Irrigation District
0.00044394	0.00051461	0	3.57832	0.00044394	0.00051461	C CFS	
0.00439326			18008.4	0.00439326		Q AF	Palmdale Water District
0.00333162	0.00386244	0	26.85431	0.00333162	0.00386244	C CFS	
0.00511040			20948.0	0.00511040		Q AF	Ventura County Flood Control District
0.00387177	0.00449108	0	31.20811	0.00387177	0.00449108	C CFS	
0.01387077			56857.6	0.01387077		Q AF	Castaic Lake Water Agency
0.01303512	0.01345294	0	105.06870	0.01303512	0.01345294	C CFS	
0.02979819			122145.6	0.02979819		Q AF	Kern County Water Agency
0.02757359	0.02868589	0	222.25509	0.02757359	0.02868589	C CFS	(Municipal and Industrial)
0.25714683			1054069.3	0.25714683		Q AF	Kern County Water Agency
0.38363824	0.32039254	0	3092.29048	0.38363824	0.32039254	C CFS	(Agriculture)
0.01170978			47999.5	0.01170978		Q AF	Santa Barbara County Flood Control
0.00886868	0.01028923	0	71.48536	0.00886868	0.01028923	C CFS	and Water Conservation District
0.00634718			26017.7	0.00634718		Q AF	San Luis Obispo County Flood Control
0.00480719	0.00557719	0	38.74804	0.00480719	0.00557719	C CFS	and Water Conservation District
0.01423570			58353.5	0.01423570		Q AF	Dudley Ridge Water District
0.02149104	0.01786337	0	173.22713	0.02149104	0.01786337	C CFS	
0.02920986			119734.0	0.02920986		Q AF	Tulare Lake Basin Water Storage
0.04411464	0.03666225	0	355.58314	0.04411464	0.03666225	C CFS	District
0.00303426			12437.7	0.00303426		Q AF	Future Contractor - San Joaquin
0.00229572	0.00266499	0	18.50445	0.00229572	0.00266499	C CFS	
0.00073885			3028.6	0.00073885		Q AF	Empire West Side Irrigation District
0.00111629	0.00092757	0	8.99776	0.00111629	0.00092757	C CFS	
0.00098519			4038.4	0.00098519		Q AF	County of Kings
0.00091265	0.00094892	0	7.35635	0.00091265	0.00094892	C CFS	
1.00000000			4099095.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	8060.43333	1.00000000	1.00000000	C CFS	

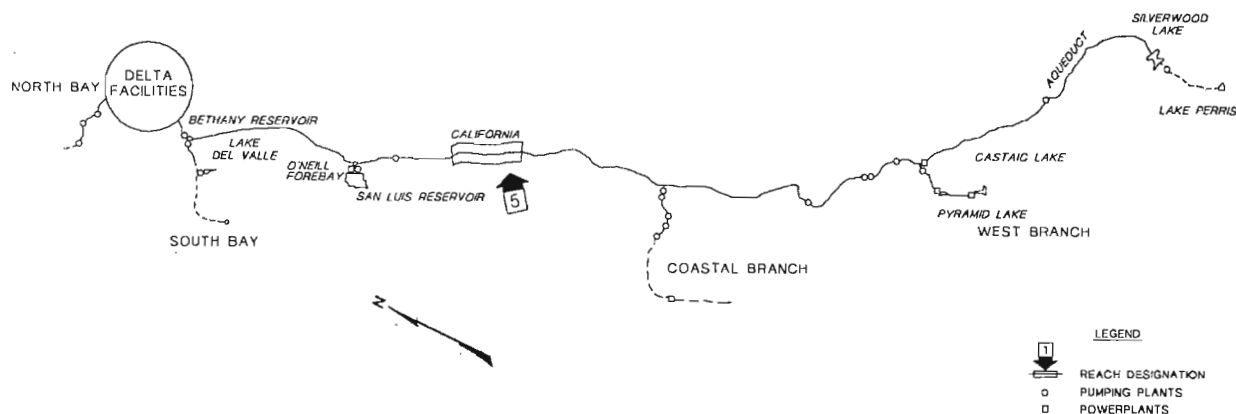
TABLES B-1 & B-2  
Proportionate Use of Each Aqueduct Reach (Continued)  
(in units as indicated)



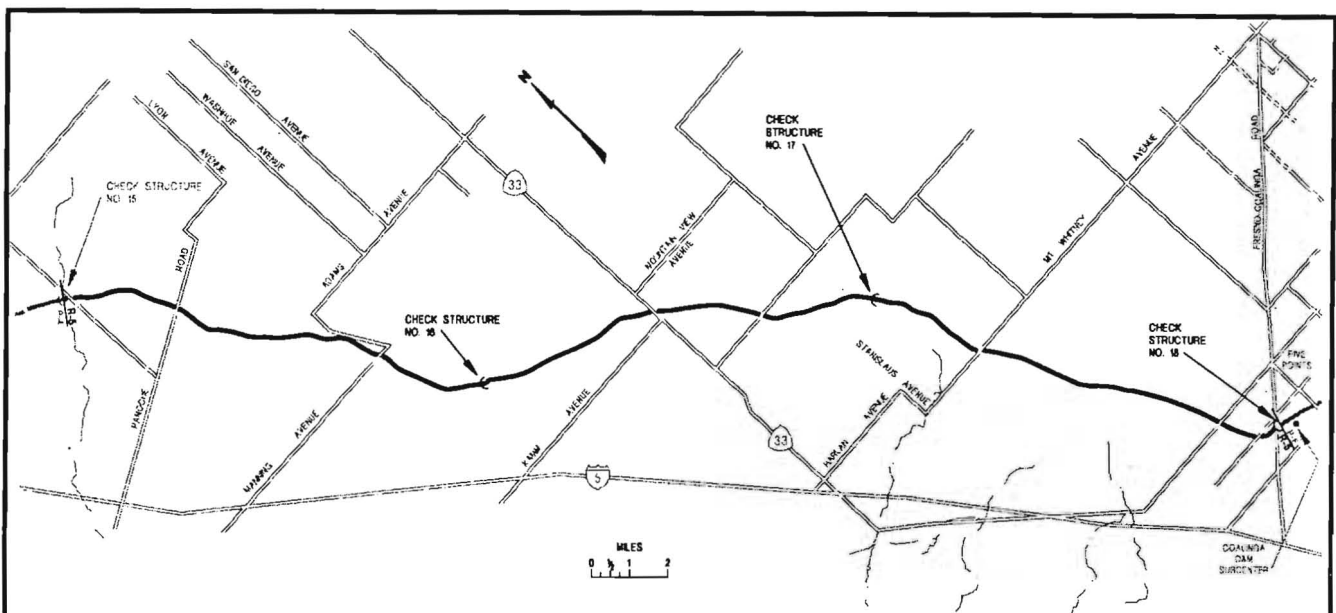
Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of			
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 4 - DOS AMIGOS PUMPING PLANT TO PANGCHE CREEK								
The Metropolitan Water District of Southern California	Q AF	0	4565.9	2011500.0	111643.1	0	0	2123143.1
	C CFS	0	7.51516	2863.14266	174.11855	184.57517	0	3221.83638
San Bernardino Valley Municipal Water District	Q AF	0	234.5	102600.0	6434.2	0	0	109034.2
	C CFS	0	0.38597	172.33413	10.39060	0.73809	0	183.46282
San Gabriel Valley Municipal Water District	Q AF	0	65.8	28800.0	1806.0	0	0	30606.0
	C CFS	0	0.10830	45.15128	2.91650	1.25670	0	49.32448
San Geronimo Pass Water Agency	Q AF	0	39.5	17300.0	1085.1	0	0	18385.1
	C CFS	0	0.06501	29.05110	1.75234	0.12679	0	30.93023
Crestline-Lake Arrowhead Water Agency	Q AF	0	13.3	5800.0	363.8	0	0	6163.8
	C CFS	0	0.02189	9.75185	0.58751	0.03857	0	10.37793
Mojave Water Agency	Q AF	0	115.2	50800.0	2791.7	0	0	53591.7
	C CFS	0	0.18961	70.16895	4.59495	5.26267	0	80.02657
Desert Water Agency	Q AF	0	86.4	38100.0	2093.6	0	0	40193.6
	C CFS	0	0.14221	63.98091	3.44592	0.24980	0	67.67663
Coachella Valley County Water District	Q AF	0	52.4	23100.0	1269.3	0	0	24369.3
	C CFS	0	0.08625	38.80294	2.08918	0.14777	0	41.03989
Antelope Valley-East Kern Water Agency	Q AF	0	307.9	138400.0	4767.3	0	0	143167.3
	C CFS	0	0.50678	191.16896	7.84665	14.33767	0	213.35328
Littlerock Creek Irrigation District	Q AF	0	5.1	2300.0	95.0	0	0	2395.0
	C CFS	0	0.00839	3.17694	0.15636	0.23827	0	3.57157
Palmdale Water District	Q AF	0	38.7	17300.0	677.3	0	0	17977.3
	C CFS	0	0.06370	23.89612	1.11479	1.79221	0	26.80312
Ventura County Flood Control District	Q AF	0	45.0	20000.0	911.9	0	0	20911.9
	C CFS	0	0.07407	27.62557	1.41923	2.10390	0	31.14870
Castaic Lake Water Agency	Q AF	0	122.1	54200.0	2559.5	0	0	56759.5
	C CFS	0	0.20097	95.21429	3.99138	5.70156	0	104.90723
Kern County Water Agency (Municipal and Industrial)	Q AF	0	262.2	119600.0	2334.9	0	0	121934.9
	C CFS	0	0.43156	218.06521	3.84309	0	0	221.90830
Kern County Water Agency (Agriculture)	Q AF	0	2262.9	1033800.0	18451.3	0	0	1052251.3
	C CFS	0	3.72458	3058.92860	30.36958	0	0	3089.29818
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	103.0	45486.0	2430.7	0	0	47916.7
	C CFS	0	0.16953	62.82884	3.68414	4.83610	0	71.34908
San Luis Obispo County Flood Control and Water Conservation District	Q AF	0	55.9	25000.0	972.8	0	0	25972.8
	C CFS	0	0.09201	34.53197	1.52081	2.62135	0	38.67414
Dudley Ridge Water District	Q AF	0	125.3	57700.0	552.9	0	0	58252.9
	C CFS	0	0.20624	172.15151	0.91004	0	0	173.06155
Tulare Lake Basin Water Storage District	Q AF	0	257.0	118500.0	1027.5	0	0	119527.5
	C CFS	0	0.42300	353.55206	1.69119	0	0	355.24325
Future Contractor - San Joaquin	Q AF	0	26.7	12214.0	202.3	0	0	12416.3
	C CFS	0	0.04395	16.87094	0.33297	1.26532	0	18.46923
Empire West Side Irrigation District	Q AF	0	6.5	3000.0	23.4	0	0	3023.4
	C CFS	0	0.01070	8.95069	0.03851	0	0	8.98920
County of Kings	Q AF	0	8.7	4000.0	31.4	0	0	4031.4
	C CFS	0	0.01432	7.29315	0.05168	0	0	7.34483
TOTALS	Q AF	0	8800.0	3929500.0	162525.0	0	0	4092025.0
	C CFS	0	14.48420	7566.63867	256.86598	225.29194	0	8048.79659



TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
 (in units as indicated)

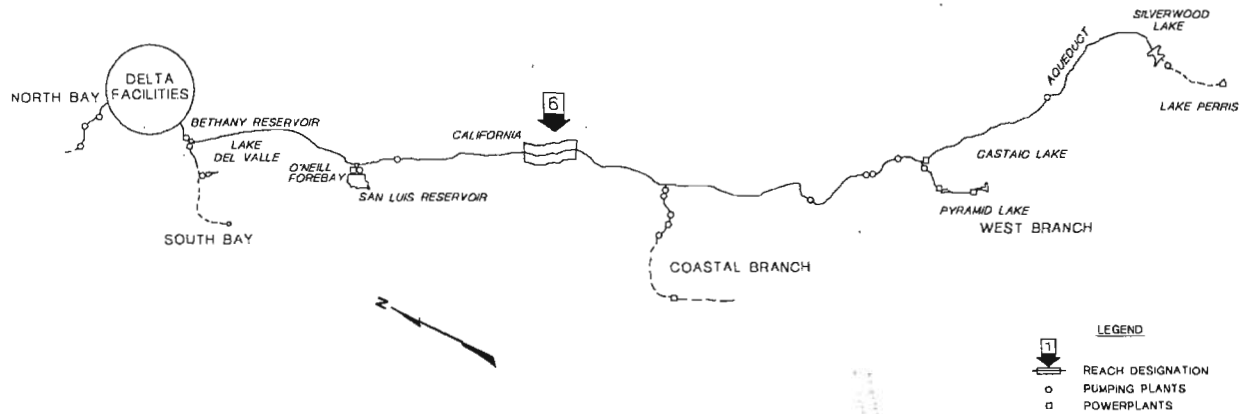


Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of			Subtotal
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 5 - PANOCH CREEK TO FIVE POINTS								
The Metropolitan Water District of Southern California	Q AF	0	6877.3	2011500.0	107077.2	0	0	2118577.2
	C CFS	0	11.31957	2863.14266	166.60339	184.57517	0	3214.32122
San Bernardino Valley Municipal Water District	Q AF	0	353.2	102600.0	6199.7	0	0	108799.7
	C CFS	0	0.58134	172.33413	10.00463	0.73809	0	183.07685
San Gabriel Valley Municipal Water District	Q AF	0	99.1	28800.0	1740.2	0	0	30540.2
	C CFS	0	0.16311	45.15128	2.80820	1.25670	0	49.21618
San Geronimo Pass Water Agency	Q AF	0	59.6	17300.0	1045.6	0	0	18345.6
	C CFS	0	0.09810	29.05110	1.68732	0.12679	0	30.86521
Crestline-Lake Arrowhead Water Agency	Q AF	0	20.0	5800.0	350.5	0	0	6150.5
	C CFS	0	0.03292	9.75185	0.56562	0.03857	0	10.35604
Mojave Water Agency	Q AF	0	173.6	50800.0	2676.5	0	0	53476.5
	C CFS	0	0.28573	70.16895	4.40534	5.26267	0	79.83696
Desert Water Agency	Q AF	0	130.2	38100.0	2007.2	0	0	40107.2
	C CFS	0	0.21430	63.98091	3.30371	0.24980	0	67.53442
Coachella Valley County Water District	Q AF	0	78.9	23100.0	1216.9	0	0	24316.9
	C CFS	0	0.12986	38.80294	2.00293	0.14777	0	40.95364
Antelope Valley-East Kern Water Agency	Q AF	0	463.7	138400.0	4459.4	0	0	142859.4
	C CFS	0	0.76322	191.16896	7.33987	14.33767	0	212.84650
Littlerock Creek Irrigation District	Q AF	0	7.8	2300.0	89.9	0	0	2389.9
	C CFS	0	0.01284	3.17694	0.14797	0.23827	0	3.56318
Palmdale Water District	Q AF	0	58.2	17300.0	638.6	0	0	17938.6
	C CFS	0	0.09579	23.89612	1.05109	1.79221	0	26.73942
Ventura County Flood Control District	Q AF	0	67.7	20000.0	866.9	0	0	20866.9
	C CFS	0	0.11143	27.62557	1.34516	2.10390	0	31.07463
Castaic Lake Water Agency	Q AF	0	183.9	54200.0	2437.4	0	0	56637.4
	C CFS	0	0.30269	95.21429	3.79041	5.70156	0	104.70626
Kern County Water Agency (Municipal and Industrial)	Q AF	0	395.0	119600.0	2072.7	0	0	121672.7
	C CFS	0	0.65014	218.06521	3.41152	0	0	221.47673
Kern County Water Agency (Agriculture)	Q AF	0	3408.5	1033800.0	16188.4	0	0	1049988.4
	C CFS	0	5.61016	3058.92860	26.64500	0	0	3085.57360
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	155.2	45486.0	2327.7	0	0	47813.7
	C CFS	0	0.25545	62.82884	3.51460	4.83610	0	71.17955
San Luis Obispo County Flood Control and Water Conservation District	Q AF	0	84.1	25000.0	916.9	0	0	25916.9
	C CFS	0	0.13842	34.53197	1.42881	2.62135	0	38.58213
Dudley Ridge Water District	Q AF	0	188.7	57700.0	427.6	0	0	58127.6
	C CFS	0	0.31059	172.15151	0.70380	0	0	172.85531
Tulare Lake Basin Water Storage District	Q AF	0	387.2	118500.0	770.5	0	0	119270.5
	C CFS	0	0.63730	353.55206	1.26819	0	0	354.82025
Future Contractor - San Joaquin	Q AF	0	40.2	12214.0	175.6	0	0	12389.6
	C CFS	0	0.06617	16.87094	0.28903	1.26532	0	18.42529
Empire West Side Irrigation District	Q AF	0	9.8	3000.0	16.9	0	0	3016.9
	C CFS	0	0.01613	8.95069	0.02782	0	0	8.97851
County of Kings	Q AF	0	13.1	4000.0	22.7	0	0	4022.7
	C CFS	0	0.02156	7.29315	0.03736	0	0	7.33051
TOTALS	Q AF	0	13255.0	3929500.0	153725.0	0	0	4083225.0
	C CFS	0	21.81682	7566.63867	242.38178	225.29194	0	8034.31239



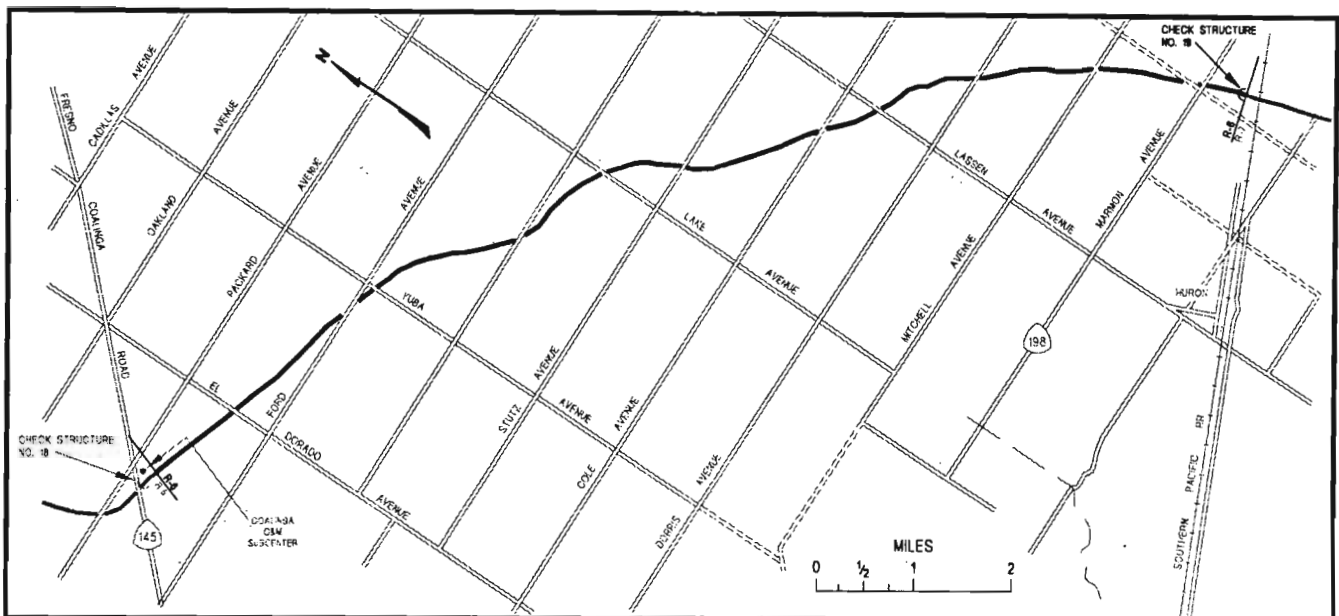
Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
PANOCHE CREEK TO FIVE POINTS - REACH 5							
0.51884900			2118577.2	0.51884900		Q AF	The Metropolitan Water District of Southern California
0.40007421	0.45946161	0	3214.32122	0.40007421	0.45946161	C CFS	
0.02664553			108799.7	0.02664553		Q AF	San Bernardino Valley Municipal Water District
0.02278687	0.02471620	0	183.07685	0.02278687	0.02471620	C CFS	
0.00747943			30540.2	0.00747943		Q AF	San Gabriel Valley Municipal Water District
0.00612575	0.00680259	0	49.21618	0.00612575	0.00680259	C CFS	
0.00449292			18345.6	0.00449292		Q AF	San Geronio Pass Water Agency
0.00384167	0.00416730	0	30.86521	0.00384167	0.00416730	C CFS	
0.00150628			6150.5	0.00150628		Q AF	Crestline-Lake Arrowhead Water Agency
0.00128898	0.00139763	0	10.35604	0.00128898	0.00139763	C CFS	
0.01309663			53476.5	0.01309663		Q AF	Mojave Water Agency
0.00993700	0.01151681	0	79.83696	0.00993700	0.01151681	C CFS	
0.00982243			40107.2	0.00982243		Q AF	Desert Water Agency
0.00840575	0.00911409	0	67.53442	0.00840575	0.00911409	C CFS	
0.00595532			24316.9	0.00595532		Q AF	Coachella Valley County Water District
0.00509734	0.00552633	0	40.95364	0.00509734	0.00552633	C CFS	
0.03498690			142859.4	0.03498690		Q AF	Antelope Valley-East Kern Water Agency
0.02649219	0.03073954	0	212.84650	0.02649219	0.03073954	C CFS	
0.00058530			2389.9	0.00058530		Q AF	Littlerock Creek Irrigation District
0.00044350	0.00051440	0	3.56318	0.00044350	0.00051440	C CFS	
0.00439324			17938.6	0.00439324		Q AF	Palmdale Water District
0.00332815	0.00386070	0	26.73942	0.00332815	0.00386070	C CFS	
0.00511040			20866.9	0.00511040		Q AF	Ventura County Flood Control District
0.00386774	0.00448907	0	31.07463	0.00386774	0.00448907	C CFS	
0.01387075			56637.4	0.01387075		Q AF	Castaic Lake Water Agency
0.01303239	0.01345157	0	104.70626	0.01303239	0.01345157	C CFS	
0.02979819			121672.7	0.02979819		Q AF	Kern County Water Agency (Municipal and Industrial)
0.02756636	0.02868227	0	221.47673	0.02756636	0.02868227	C CFS	
0.25714684			1049988.4	0.25714684		Q AF	Kern County Water Agency (Agriculture)
0.38404949	0.32059816	0	3085.57360	0.38404949	0.32059816	C CFS	
0.01170979			47813.7	0.01170979		Q AF	Santa Barbara County Flood Control and Water Conservation District
0.00885945	0.01028462	0	71.17955	0.00885945	0.01028462	C CFS	
0.00634716			25916.9	0.00634716		Q AF	San Luis Obispo County Flood Control and Water Conservation District
0.00480217	0.00557467	0	38.58213	0.00480217	0.00557467	C CFS	
0.01423571			58127.6	0.01423571		Q AF	Dudley Ridge Water District
0.02151464	0.01787517	0	172.85531	0.02151464	0.01787517	C CFS	
0.02920988			119270.5	0.02920988		Q AF	Tulare Lake Basin Water Storage District
0.04416311	0.03668649	0	354.82025	0.04416311	0.03668649	C CFS	
0.00303427			12389.6	0.00303427		Q AF	Future Contractor - San Joaquin
0.00229332	0.00266380	0	18.42529	0.00229332	0.00266380	C CFS	
0.00073885			3016.9	0.00073885		Q AF	Empire West Side Irrigation District
0.00111752	0.00092819	0	8.97851	0.00111752	0.00092819	C CFS	
0.00098518			4022.7	0.00098518		Q AF	County of Kings
0.00091240	0.00094879	0	7.33051	0.00091240	0.00094879	C CFS	
1.00000000			4083225.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	8034.31239	1.00000000	1.00000000	C CFS	

TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)



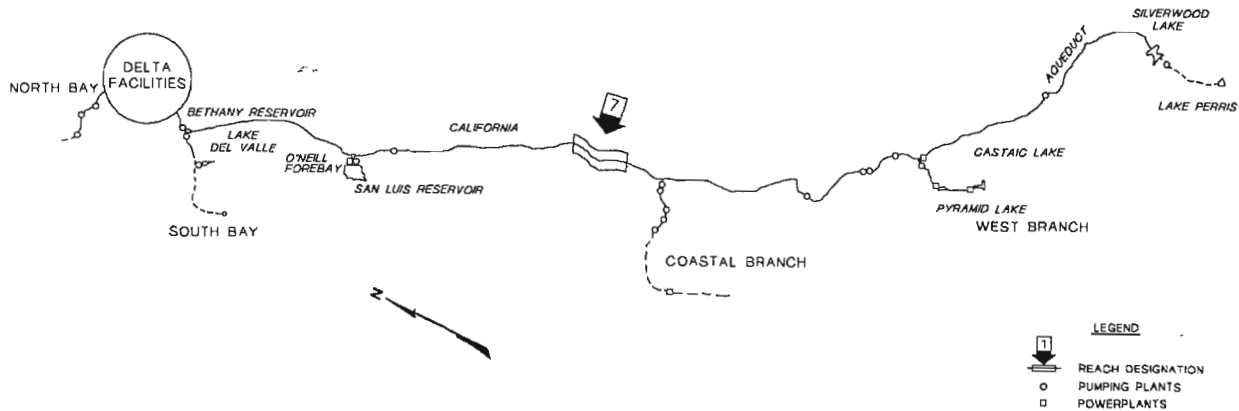
Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of			Subtotal
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 6 - FIVE POINTS TO ARROYO PASAJERO								
The Metropolitan Water District of Southern California	Q AF	0	2197.3	2011500.0	100199.9	0	0	2111699.9
	C CFS	0	3.61661	2863.14266	155.28383	184.57517	0	3203.00166
San Bernardino Valley Municipal Water District	Q AF	0	112.8	102600.0	5846.5	0	0	108446.5
	C CFS	0	0.18566	172.33413	9.42329	0.73809	0	182.49551
San Gabriel Valley Municipal Water District	Q AF	0	31.7	28800.0	1641.1	0	0	30441.1
	C CFS	0	0.05218	45.15128	2.64509	1.25670	0	49.05307
San Geronio Pass Water Agency	Q AF	0	19.0	17300.0	986.0	0	0	18286.0
	C CFS	0	0.03127	29.05110	1.58923	0.12679	0	30.76712
Crestline-Lake Arrowhead Water Agency	Q AF	0	6.4	5800.0	330.5	0	0	6130.5
	C CFS	0	0.01053	9.75185	0.53270	0.03857	0	10.32312
Mojave Water Agency	Q AF	0	55.5	50800.0	2502.9	0	0	53302.9
	C CFS	0	0.09135	70.16895	4.11960	5.26267	0	79.55122
Desert Water Agency	Q AF	0	41.6	38100.0	1877.0	0	0	39977.0
	C CFS	0	0.06847	63.98091	3.08941	0.24980	0	67.32012
Coachella Valley County Water District	Q AF	0	25.2	23100.0	1138.0	0	0	24238.0
	C CFS	0	0.04148	38.80294	1.87307	0.14777	0	40.82378
Antelope Valley-East Kern Water Agency	Q AF	0	148.2	138400.0	3995.7	0	0	142395.7
	C CFS	0	0.24393	191.16896	6.57665	14.33767	0	212.06328
Littlerock Creek Irrigation District	Q AF	0	2.5	2300.0	82.1	0	0	2382.1
	C CFS	0	0.00411	3.17694	0.13513	0.23827	0	3.55034
Palmdale Water District	Q AF	0	18.6	17300.0	580.4	0	0	17880.4
	C CFS	0	0.03061	23.89612	0.95530	1.79221	0	26.64363
Ventura County Flood Control District	Q AF	0	21.6	20000.0	799.2	0	0	20799.2
	C CFS	0	0.03555	27.62557	1.23373	2.10390	0	30.96320
Castaic Lake Water Agency	Q AF	0	58.7	54200.0	2253.5	0	0	56453.5
	C CFS	0	0.09662	95.21429	3.48773	5.70156	0	104.40358
Kern County Water Agency (Municipal and Industrial)	Q AF	0	126.2	119600.0	1677.7	0	0	121277.7
	C CFS	0	0.20772	218.06521	2.76138	0	0	220.82659
Kern County Water Agency (Agriculture)	Q AF	0	1089.0	1033800.0	12779.9	0	0	1046579.9
	C CFS	0	1.79242	3058.92860	21.03484	0	0	3079.96344
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	49.6	45486.0	2172.5	0	0	47658.5
	C CFS	0	0.08164	62.82884	3.25916	4.83610	0	70.92410
San Luis Obispo County Flood Control and Water Conservation District	Q AF	0	26.9	25000.0	832.8	0	0	25832.8
	C CFS	0	0.04428	34.53197	1.29038	2.62135	0	38.44370
Dudley Ridge Water District	Q AF	0	60.3	57700.0	238.9	0	0	57938.9
	C CFS	0	0.09925	172.15151	0.39321	0	0	172.54472
Tulare Lake Basin Water Storage District	Q AF	0	123.7	118500.0	383.3	0	0	118883.3
	C CFS	0	0.20360	353.55206	0.63089	0	0	354.18295
Future Contractor - San Joaquin	Q AF	0	12.9	12214.0	135.4	0	0	12349.4
	C CFS	0	0.02123	16.87094	0.22286	1.26532	0	18.35912
Empire West Side Irrigation District	Q AF	0	3.1	3000.0	7.1	0	0	3007.1
	C CFS	0	0.00510	8.95069	0.01169	0	0	8.96238
County of Kings	Q AF	0	4.2	4000.0	9.6	0	0	4009.6
	C CFS	0	0.00691	7.29315	0.01580	0	0	7.30895
TOTALS	Q AF	0	4235.0	3929500.0	140470.0	0	0	4069970.0
	C CFS	0	6.97052	7566.63867	220.56496	225.29194	0	8012.49557



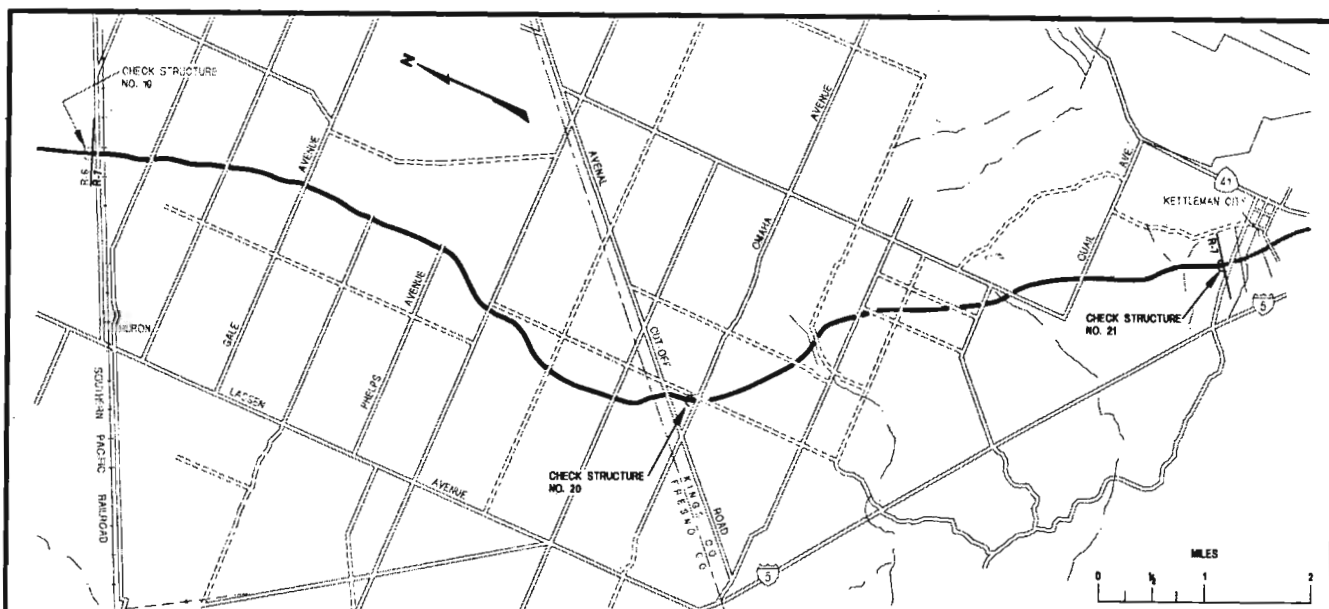


Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
FIVE POINTS TO ARROYO PASAJERO - REACH 6							
0.51884901			2111699.9	0.51884901		Q AF	The Metropolitan Water District of Southern California
0.39975082	0.45929991	0	3203.00166	0.39975082	0.45929991	C CFS	San Bernardino Valley Municipal Water District
0.02664553			108446.5	0.02664553		Q AF	San Gabriel Valley Municipal Water District
0.02277636	0.02471095	0	182.49551	0.02277636	0.02471095	C CFS	San Geronio Pass Water Agency
0.00747944			30441.1	0.00747944		Q AF	
0.00612207	0.00680076	0	49.05307	0.00612207	0.00680076	C CFS	
0.00449291			18286.0	0.00449291		Q AF	
0.00383989	0.00416640	0	30.76712	0.00383989	0.00416640	C CFS	
0.00150628			6130.5	0.00150628		Q AF	Crestline-Lake Arrowhead Water Agency
0.00128838	0.00139733	0	10.32312	0.00128838	0.00139733	C CFS	
0.01309663			53302.9	0.01309663		Q AF	Mojave Water Agency
0.00992840	0.01151251	0	79.55122	0.00992840	0.01151251	C CFS	
0.00982243			39977.0	0.00982243		Q AF	Desert Water Agency
0.00840189	0.00911216	0	67.32012	0.00840189	0.00911216	C CFS	
0.00595533			24238.0	0.00595533		Q AF	Coachella Valley County Water District
0.00509501	0.00552517	0	40.82378	0.00509501	0.00552517	C CFS	
0.03498692			142395.7	0.03498692		Q AF	Antelope Valley-East Kern Water Agency
0.02646907	0.03072799	0	212.08328	0.02646907	0.03072799	C CFS	
0.00058529			2382.1	0.00058529		Q AF	Littlerock Creek Irrigation District
0.00044310	0.00051419	0	3.55034	0.00044310	0.00051419	C CFS	
0.00439325			17880.4	0.00439325		Q AF	Palmdale Water District
0.00332526	0.00385926	0	26.64363	0.00332526	0.00385926	C CFS	
0.00511040			20799.2	0.00511040		Q AF	Ventura County Flood Control District
0.00386436	0.00448738	0	30.96320	0.00386436	0.00448738	C CFS	
0.01387074			56453.5	0.01387074		Q AF	Castaic Lake Water Agency
0.01303009	0.01345042	0	104.40358	0.01303009	0.01345042	C CFS	
0.02979818			121277.7	0.02979818		Q AF	Kern County Water Agency (Municipal and Industrial)
0.02756028	0.02867923	0	220.82659	0.02756028	0.02867923	C CFS	
0.25714683			1046579.9	0.25714683		Q AF	Kern County Water Agency (Agriculture)
0.38439503	0.32077093	0	3079.96344	0.38439503	0.32077093	C CFS	
0.01170979			47658.5	0.01170979		Q AF	Santa Barbara County Flood Control and Water Conservation District
0.00885169	0.01028074	0	70.92410	0.00885169	0.01028074	C CFS	
0.00634717			25832.8	0.00634717		Q AF	San Luis Obispo County Flood Control and Water Conservation District
0.00479797	0.00557257	0	38.44370	0.00479797	0.00557257	C CFS	
0.01423571			57938.9	0.01423571		Q AF	Dudley Ridge Water District
0.02153446	0.01788508	0	172.54472	0.02153446	0.01788508	C CFS	
0.02920987			118883.3	0.02920987		Q AF	Tulare Lake Basin Water Storage District
0.04420382	0.03670685	0	354.18295	0.04420382	0.03670685	C CFS	
0.00303427			12349.4	0.00303427		Q AF	Future Contractor - San Joaquin
0.00229131	0.00266279	0	18.35912	0.00229131	0.00266279	C CFS	
0.00073885			3007.1	0.00073885		Q AF	Empire West Side Irrigation District
0.00111855	0.00092870	0	8.96238	0.00111855	0.00092870	C CFS	
0.00098517			4009.6	0.00098517		Q AF	County of Kings
0.00091219	0.00094868	0	7.30895	0.00091219	0.00094868	C CFS	
1.00000000			4069970.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	8012.49557	1.00000000	1.00000000	C CFS	

TABLES B-1 & B-2  
Proportionate Use of Each Aqueduct Reach (Continued)  
(in units as indicated)

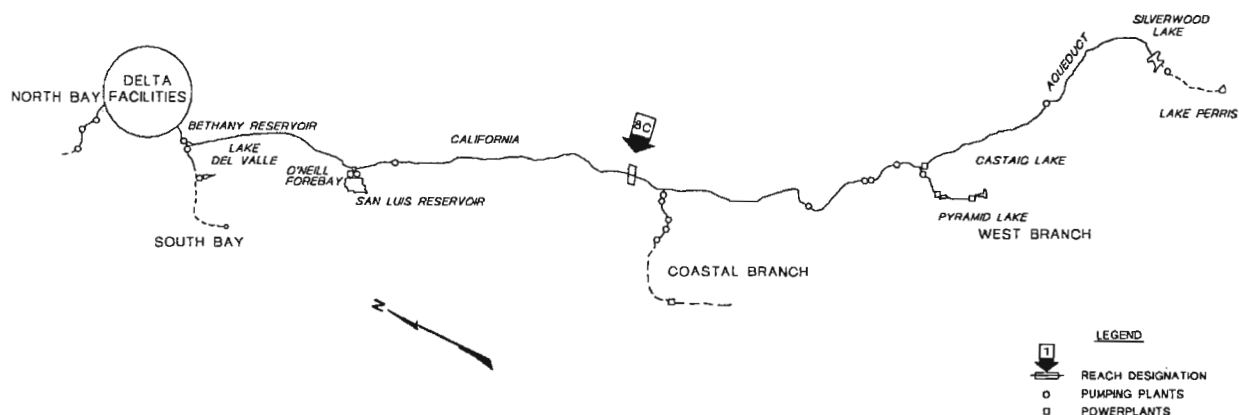


Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach					Subtotal
				For Delivery of Entitlements	For Compensation Of				
					Operational Losses	Scheduled Outages	Downstream Regulation		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
REACH 7 - ARROYO PASAJERO TO KETTLEMAN CITY									
The Metropolitan Water District of Southern California	Q AF	0	2768.1	2011500.0	98002.6	0	0	2109502.6	
	C CFS	0	4.55610	2863.14266	151.66722	184.57517	0	3199.38505	
San Bernardino Valley Municipal Water District	Q AF	0	142.1	102600.0	5733.7	0	0	108333.7	
	C CFS	0	0.23389	172.33413	9.23763	0.73809	0	182.30985	
San Gabriel Valley Municipal Water District	Q AF	0	39.9	28800.0	1609.4	0	0	30409.4	
	C CFS	0	0.06567	45.15128	2.59291	1.25670	0	49.00089	
San Geronio Pass Water Agency	Q AF	0	24.0	17300.0	967.0	0	0	18267.0	
	C CFS	0	0.03950	29.05110	1.55795	0.12679	0	30.73584	
Crestline-Lake Arrowhead Water Agency	Q AF	0	8.0	5800.0	324.1	0	0	6124.1	
	C CFS	0	0.01317	9.75185	0.52217	0.03857	0	10.31259	
Mojave Water Agency	Q AF	0	69.9	50800.0	2447.4	0	0	53247.4	
	C CFS	0	0.11505	70.16895	4.02825	5.26267	0	79.45987	
Desert Water Agency	Q AF	0	52.4	38100.0	1835.4	0	0	39935.4	
	C CFS	0	0.08625	63.98091	3.02094	0.24980	0	67.25165	
Coachella Valley County Water District	Q AF	0	31.8	23100.0	1112.8	0	0	24212.8	
	C CFS	0	0.05234	38.80294	1.83159	0.14777	0	40.78230	
Antelope Valley-East Kern Water Agency	Q AF	0	186.6	138400.0	3847.5	0	0	142247.5	
	C CFS	0	0.30713	191.16896	6.33272	14.33767	0	211.83935	
Littlerock Creek Irrigation District	Q AF	0	3.1	2300.0	79.6	0	0	2379.6	
	C CFS	0	0.00510	3.17694	0.13102	0.23827	0	3.54623	
Palmdale Water District	Q AF	0	23.4	17300.0	561.8	0	0	17861.8	
	C CFS	0	0.03851	23.89612	0.92468	1.79221	0	26.61301	
Ventura County Flood Control District	Q AF	0	27.3	20000.0	777.6	0	0	20777.6	
	C CFS	0	0.04493	27.62557	1.19818	2.10390	0	30.92765	
Castaic Lake Water Agency	Q AF	0	74.0	54200.0	2194.8	0	0	56394.8	
	C CFS	0	0.12180	95.21429	3.39111	5.70156	0	104.30696	
Kern County Water Agency (Municipal and Industrial)	Q AF	0	159.0	119600.0	1551.5	0	0	121151.5	
	C CFS	0	0.26170	218.06521	2.55366	0	0	220.61887	
Kern County Water Agency (Agriculture)	Q AF	0	1371.9	1033800.0	11690.9	0	0	1045490.9	
	C CFS	0	2.25805	3058.92860	19.24242	0	0	3078.17102	
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	62.5	45486.0	2122.9	0	0	47608.9	
	C CFS	0	0.10287	62.82884	3.17752	4.83610	0	70.84246	
San Luis Obispo County Flood Control and Water Conservation District	Q AF	0	33.9	25000.0	805.9	0	0	25805.9	
	C CFS	0	0.05580	34.53197	1.24611	2.62135	0	38.39943	
Dudley Ridge Water District	Q AF	0	75.9	57700.0	178.6	0	0	57878.6	
	C CFS	0	0.12493	172.15151	0.29396	0	0	172.44547	
Tulare Lake Basin Water Storage District	Q AF	0	155.8	118500.0	259.6	0	0	118759.6	
	C CFS	0	0.25644	353.55206	0.42728	0	0	353.97934	
Future Contractor - San Joaquin	Q AF	0	16.2	12214.0	122.5	0	0	12336.5	
	C CFS	0	0.02666	16.87094	0.20163	1.26532	0	18.33789	
Empire West Side Irrigation District	Q AF	0	3.9	3000.0	4.0	0	0	3004.0	
	C CFS	0	0.00642	8.95069	0.00658	0	0	8.95727	
County of Kings	Q AF	0	5.3	4000.0	5.4	0	0	4005.4	
	C CFS	0	0.00872	7.29315	0.00889	0	0	7.30204	
TOTALS	Q AF	0	5335.0	3929500.0	136235.0	0	0	4065735.0	
	C CFS	0	8.78104	7566.63867	213.59444	225.29194	0	8005.52505	

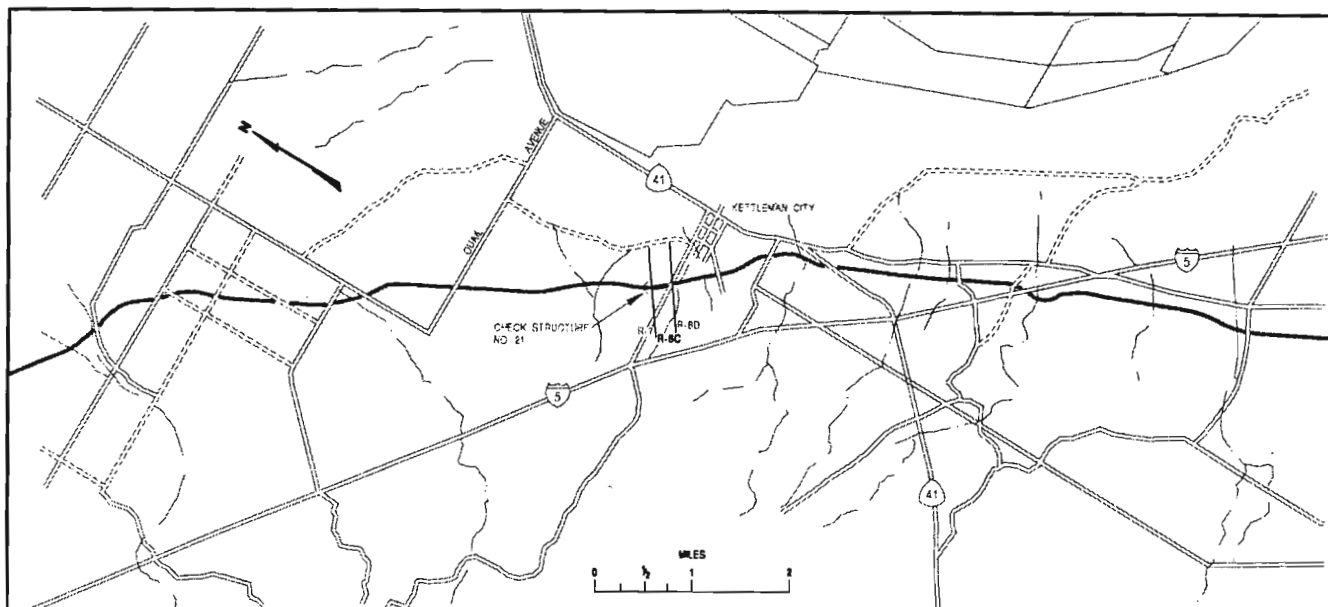


Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
ARROYO PASAJERO TO KETTLEMAN CITY - REACH 7							
0.51884902			2109502.6	0.51884902		Q AF	The Metropolitan Water District of Southern California
0.39964712	0.45924807	0	3199.38505	0.39964712	0.45924807	C CFS	
0.02664554			108333.7	0.02664554		Q AF	San Bernardino Valley Municipal Water District
0.02277300	0.02470927	0	182.30985	0.02277300	0.02470927	C CFS	
0.00747944			30409.4	0.00747944		Q AF	San Gabriel Valley Municipal Water District
0.00612088	0.00680016	0	49.00089	0.00612088	0.00680016	C CFS	
0.00449291			18267.0	0.00449291		Q AF	San Geronimo Pass Water Agency
0.00383933	0.00416612	0	30.73584	0.00383933	0.00416612	C CFS	
0.00150627			6124.1	0.00150627		Q AF	Crestline-Lake Arrowhead Water Agency
0.00128818	0.00139723	0	10.31259	0.00128818	0.00139723	C CFS	
0.01309662			53247.4	0.01309662		Q AF	Mojave Water Agency
0.00992563	0.01151113	0	79.45987	0.00992563	0.01151113	C CFS	
0.00982243			39935.4	0.00982243		Q AF	Desert Water Agency
0.00840066	0.00911154	0	67.25165	0.00840066	0.00911154	C CFS	
0.00595533			24212.8	0.00595533		Q AF	Coachella Valley County Water District
0.00509427	0.00552480	0	40.78230	0.00509427	0.00552480	C CFS	
0.03498691			142247.5	0.03498691		Q AF	Antelope Valley-East Kern Water Agency
0.02646164	0.03072428	0	211.83935	0.02646164	0.03072428	C CFS	
0.00058528			2379.6	0.00058528		Q AF	Littlerock Creek Irrigation District
0.00044297	0.00051413	0	3.54623	0.00044297	0.00051413	C CFS	
0.00439325			17861.8	0.00439325		Q AF	Palmdale Water District
0.00332433	0.00385879	0	26.61301	0.00332433	0.00385879	C CFS	
0.00511042			20777.6	0.00511042		Q AF	Ventura County Flood Control District
0.00386329	0.00448685	0	30.92765	0.00386329	0.00448685	C CFS	
0.01387075			56394.8	0.01387075		Q AF	Castaic Lake Water Agency
0.01302937	0.01345006	0	104.30696	0.01302937	0.01345006	C CFS	
0.02979818			121151.5	0.02979818		Q AF	Kern County Water Agency (Municipal and Industrial)
0.02755833	0.02867825	0	220.61887	0.02755833	0.02867825	C CFS	
0.25714684			1045490.9	0.25714684		Q AF	Kern County Water Agency (Agriculture)
0.38450583	0.32082633	0	3078.17102	0.38450583	0.32082633	C CFS	
0.01170979			47608.9	0.01170979		Q AF	Santa Barbara County Flood Control and Water Conservation District
0.00884920	0.01027949	0	70.84246	0.00884920	0.01027949	C CFS	
0.00634717			25805.9	0.00634717		Q AF	San Luis Obispo County Flood Control and Water Conservation District
0.00479662	0.00557189	0	38.39943	0.00479662	0.00557189	C CFS	
0.01423570			57878.6	0.01423570		Q AF	Dudley Ridge Water District
0.02154081	0.01788826	0	172.44547	0.02154081	0.01788826	C CFS	
0.02920987			118759.6	0.02920987		Q AF	Tulare Lake Basin Water Storage District
0.04421688	0.03671338	0	353.97934	0.04421688	0.03671338	C CFS	
0.00303426			12336.5	0.00303426		Q AF	Future Contractor - San Joaquin
0.00229065	0.00266246	0	18.33789	0.00229065	0.00266246	C CFS	
0.00073886			3004.0	0.00073886		Q AF	Empire West Side Irrigation District
0.00111889	0.00092887	0	8.95727	0.00111889	0.00092887	C CFS	
0.00098516			4005.4	0.00098516		Q AF	County of Kings
0.00091212	0.00094864	0	7.30204	0.00091212	0.00094864	C CFS	
1.00000000			4065735.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	8005.52505	1.00000000	1.00000000	C CFS	

TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
 (in units as indicated)

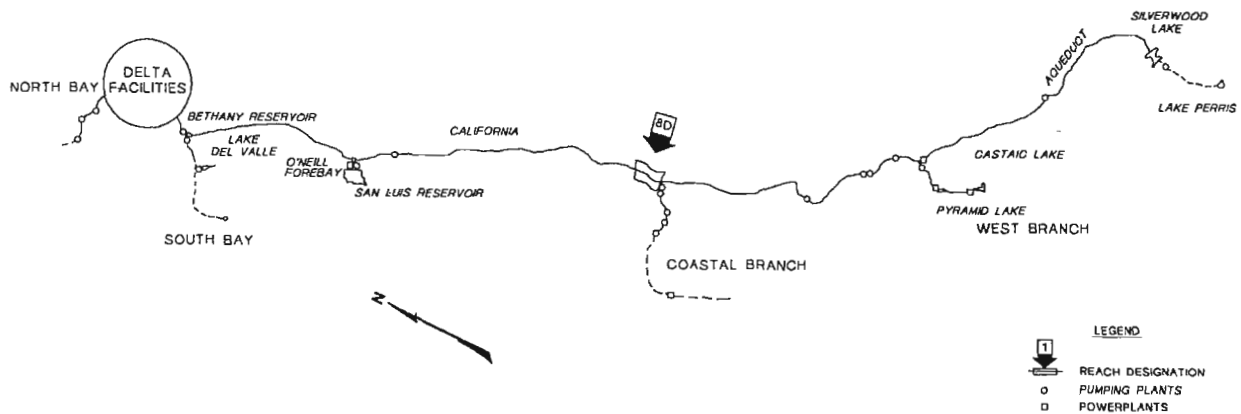


Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 8C - KETTLEMAN CITY THRU MILHAM AVENUE								
The Metropolitan Water District of Southern California	Q AF	0	51.9	2011500.0	95234.5	0	0	2106734.5
	C CFS	0	0.08542	2863.14266	147.11112	184.57517	0	3194.82895
San Bernardino Valley Municipal Water District	Q AF	0	2.7	102600.0	5591.6	0	0	108191.6
	C CFS	0	0.00444	172.33413	9.00374	0.73809	0	182.07596
San Gabriel Valley Municipal Water District	Q AF	0	0.7	28800.0	1569.5	0	0	30369.5
	C CFS	0	0.00115	45.15128	2.52724	1.2567	0	48.93522
San Geronimo Pass Water Agency	Q AF	0	0.4	17300.0	943.0	0	0	18243.0
	C CFS	0	0.00066	29.05110	1.51845	0.12679	0	30.69634
Crestline-Lake Arrowhead Water Agency	Q AF	0	0.2	5800.0	316.1	0	0	6116.1
	C CFS	0	0.00033	9.75185	0.50900	0.03857	0	10.29942
Mojave Water Agency	Q AF	0	1.3	50800.0	2377.5	0	0	53177.5
	C CFS	0	0.00214	70.16895	3.91320	5.26267	0	79.34482
Desert Water Agency	Q AF	0	1.0	38100.0	1783.0	0	0	39883.0
	C CFS	0	0.00165	63.98091	2.93470	0.24980	0	67.16541
Coachella Valley County Water District	Q AF	0	0.6	23100.0	1081.0	0	0	24181.0
	C CFS	0	0.00099	38.80294	1.77925	0.14777	0	40.72996
Antelope Valley-East Kern Water Agency	Q AF	0	3.5	138400.0	3660.9	0	0	142060.9
	C CFS	0	0.00576	191.16896	6.02559	14.33767	0	211.53222
Little Rock Creek Irrigation District	Q AF	0	0.1	2300.0	76.5	0	0	2376.5
	C CFS	0	0.00016	3.17694	0.12591	0.23827	0	3.54112
Palmdale Water District	Q AF	0	0.4	17300.0	538.4	0	0	17838.4
	C CFS	0	0.00066	23.89612	0.88617	1.79221	0	26.57450
Ventura County Flood Control District	Q AF	0	0.5	20000.0	750.3	0	0	20750.3
	C CFS	0	0.00082	27.62557	1.15324	2.10390	0	30.88271
Castaic Lake Water Agency	Q AF	0	1.4	54200.0	2120.8	0	0	56320.8
	C CFS	0	0.00230	95.21429	3.26931	5.70156	0	104.18516
Kern County Water Agency (Municipal and Industrial)	Q AF	0	3.0	119600.0	1392.5	0	0	120992.5
	C CFS	0	0.00494	218.06521	2.29196	0	0	220.35717
Kern County Water Agency (Agriculture)	Q AF	0	25.7	1033800.0	10319.0	0	0	1044119.0
	C CFS	0	0.04230	3058.92860	16.98437	0	0	3075.91297
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	1.2	45486.0	2060.4	0	0	47546.4
	C CFS	0	0.00198	62.82884	3.07465	4.83610	0	70.73959
San Luis Obispo County Flood Control and Water Conservation District	Q AF	0	0.6	25000.0	772.0	0	0	25772.0
	C CFS	0	0.00099	34.53197	1.19031	2.62135	0	38.34363
Dudley Ridge Water District	Q AF	0	1.4	57700.0	102.7	0	0	57802.7
	C CFS	0	0.00230	172.15151	0.16904	0	0	172.32055
Tulare Lake Basin Water Storage District	Q AF	61050.0	2.9	118500.0	103.8	0	0	118603.8
	C CFS	182.14644	0.00477	353.55206	0.17085	0	0	353.72291
Future Contractor - San Joaquin	Q AF	0	0.3	12214.0	106.3	0	0	12320.3
	C CFS	0	0.00049	16.87094	0.17496	1.26532	0	18.31122
Empire West Side Irrigation District	Q AF	3000.0	0.1	3000.0	0.1	0	0	3000.1
	C CFS	8.95069	0.00016	8.95069	0.00016	0	0	8.95085
County of Kings	Q AF	4000.0	0.1	4000.0	0.1	0	0	4000.1
	C CFS	7.29315	0.00016	7.29315	0.00016	0	0	7.29331
<b>TOTALS</b>	Q AF	68050.0	100.0	3929500.0	130900.0	0	0	4060400.0
	C CFS	198.39028	0.16459	7566.63867	204.81339	225.29194	0	7996.74400

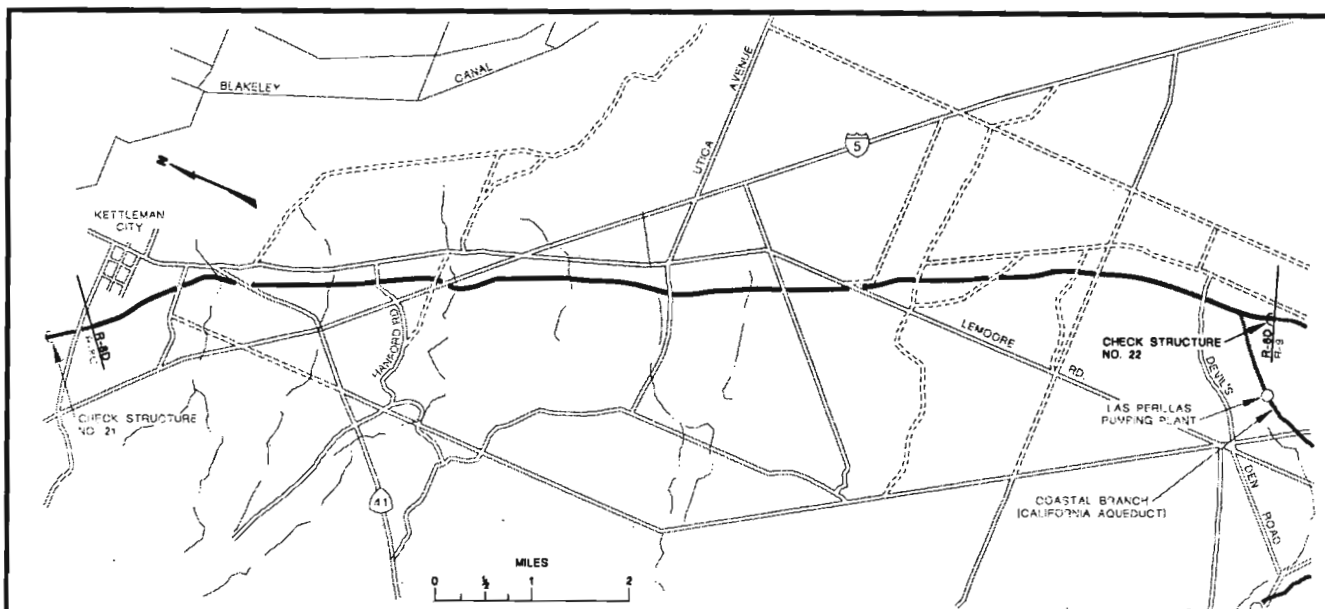


Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
KETTLEMAN CITY THRU MILHAM AVENUE - REACH 8C							
0.51884900			2106734.5	0.51884900		Q AF	The Metropolitan Water District of Southern California
0.39951622	0.45918261	188.00000	3382.82895	0.41330907	0.46607904	C CFS	San Bernardino Valley Municipal Water District
0.02664555			108191.6	0.02664555		Q AF	San Gabriel Valley Municipal Water District
0.02276876	0.02470716	0	182.07596	0.02224577	0.02444566	C CFS	San Gorgonio Pass Water Agency
0.00747944			30369.5	0.00747944		Q AF	
0.00611939	0.00679941	0	48.93522	0.00597883	0.00672913	C CFS	
0.00449291			18243.0	0.00449291		Q AF	
0.00383861	0.00416576	0	30.69634	0.00375043	0.00412167	C CFS	
0.00150628			6116.1	0.00150628		Q AF	Crestline-Lake Arrowhead Water Agency
0.00128795	0.00139712	0	10.29942	0.00125837	0.00138232	C CFS	
0.01309662			53177.5	0.01309662		Q AF	Mojave Water Agency
0.00992214	0.01150938	0	79.34482	0.00969423	0.01139543	C CFS	
0.00982243			39883.0	0.00982243		Q AF	Desert Water Agency
0.00839909	0.00911076	0	67.16541	0.00820617	0.00901430	C CFS	
0.00595532			24181.0	0.00595532		Q AF	Coachella Valley County Water District
0.00509332	0.00552432	0	40.72996	0.00497633	0.00546583	C CFS	
0.03498692			142060.9	0.03498692		Q AF	Antelope Valley-East Kern Water Agency
0.02645229	0.03071961	0	211.53222	0.02584470	0.03041581	C CFS	
0.00058529			2376.5	0.00058529		Q AF	Littlerock Creek Irrigation District
0.00044282	0.00051405	0	3.54112	0.00043265	0.00050897	C CFS	
0.00439326			17838.4	0.00439326		Q AF	Palmdale Water District
0.00332317	0.00385821	0	26.57450	0.00324683	0.00382005	C CFS	
0.00511041			20750.3	0.00511041		Q AF	Ventura County Flood Control District
0.00386191	0.00448616	0	30.88271	0.00377320	0.00444181	C CFS	
0.01387075			56320.8	0.01387075		Q AF	Castaic Lake Water Agency
0.01302845	0.01344960	0	104.18516	0.01272919	0.01329997	C CFS	
0.02979817			120992.5	0.02979817		Q AF	Kern County Water Agency (Municipal and Industrial)
0.02755586	0.02867702	0	220.35717	0.02692292	0.02836054	C CFS	
0.25714683			1044119.0	0.25714683		Q AF	Kern County Water Agency (Agriculture)
0.38464567	0.32089625	0	3075.91297	0.37581053	0.31647868	C CFS	
0.01170978			47546.4	0.01170978		Q AF	Santa Barbara County Flood Control and Water Conservation District
0.00884605	0.01027792	0	70.73959	0.00864286	0.01017632	C CFS	
0.00634716			25772.0	0.00634716		Q AF	San Luis Obispo County Flood Control and Water Conservation District
0.00479491	0.00557103	0	38.34363	0.00468477	0.00551596	C CFS	
0.01423572			57802.7	0.01423572		Q AF	Dudley Ridge Water District
0.02154884	0.01789228	0	172.32055	0.02105387	0.01764479	C CFS	
0.02920988			118603.8	0.02920988		Q AF	Tulare Lake Basin Water Storage District
0.04423337	0.03672162	0	353.72291	0.04321735	0.03621361	C CFS	
0.00303426			12320.3	0.00303426		Q AF	Future Contractor - San Joaquin
0.00228983	0.00266205	0	18.31122	0.00223724	0.00263575	C CFS	
0.00073887			3000.1	0.00073887		Q AF	Empire West Side Irrigation District
0.00111931	0.00092909	0	8.95085	0.00109360	0.00091624	C CFS	
0.00098515			4000.1	0.00098515		Q AF	County of Kings
0.00091204	0.00094859	0	7.29331	0.00089109	0.00093812	C CFS	
1.00000000			4060400.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	188.00000	8184.74400	1.00000000	1.00000000	C CFS	

TABLES B-1 & B-2  
Proportionate Use of Each Aqueduct Reach (Continued)  
(in units as indicated)

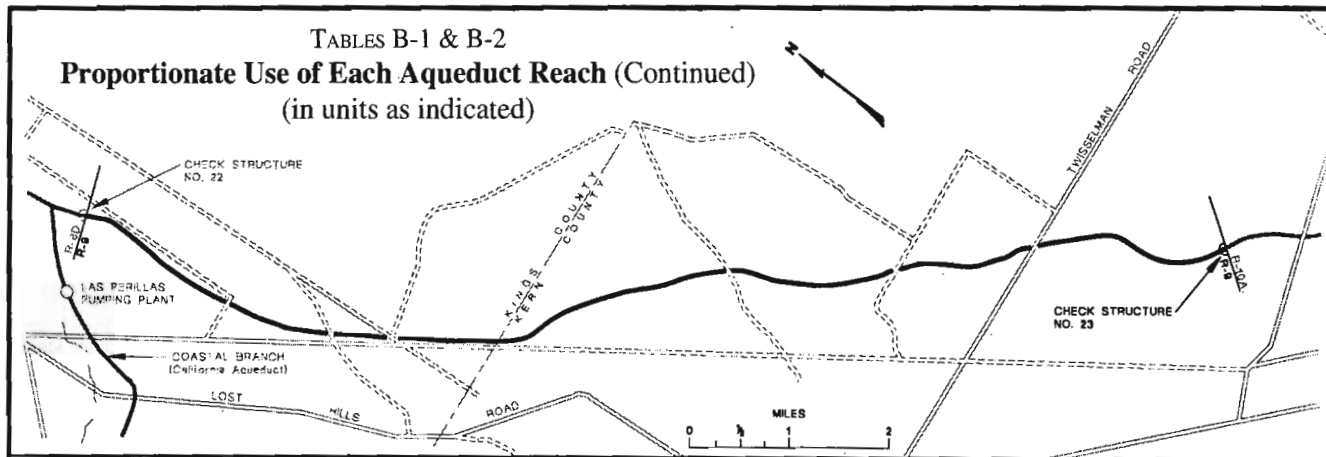


Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	Operational Losses	Scheduled Outages	Downstream Regulation	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
REACH 8D - MILHAM AVENUE THRU AVENAL GAP								
The Metropolitan Water District of Southern California	Q AF	0	3693.9	2011500.0	95182.6	0	0	2106682.6
	C CFS	0	6.07991	2863.14266	147.02569	184.57517	0	3194.74352
San Bernardino Valley Municipal Water District	Q AF	0	189.7	102600.0	5588.9	0	0	108188.9
	C CFS	0	0.31223	172.33413	8.99930	0.73809	0	182.07152
San Gabriel Valley Municipal Water District	Q AF	0	53.2	28800.0	1568.8	0	0	30368.8
	C CFS	0	0.08756	45.15128	2.52609	1.25670	0	48.93407
San Geronimo Pass Water Agency	Q AF	0	32.0	17300.0	942.6	0	0	18242.6
	C CFS	0	0.05267	29.05110	1.51779	0.12679	0	30.69568
Crestline-Lake Arrowhead Water Agency	Q AF	0	10.7	5800.0	315.9	0	0	6115.9
	C CFS	0	0.01761	9.75185	0.50867	0.03857	0	10.29909
Mojave Water Agency	Q AF	0	93.2	50800.0	2376.2	0	0	53176.2
	C CFS	0	0.15340	70.16895	3.91106	5.26267	0	79.34268
Desert Water Agency	Q AF	0	69.9	38100.0	1782.0	0	0	39882.0
	C CFS	0	0.11505	63.98091	2.93305	0.24980	0	67.16376
Coachella Valley County Water District	Q AF	0	42.4	23100.0	1080.4	0	0	24180.4
	C CFS	0	0.06979	38.80294	1.77826	0.14777	0	40.72897
Antelope Valley-East Kern Water Agency	Q AF	0	249.1	138400.0	3657.4	0	0	142057.4
	C CFS	0	0.41000	191.16896	6.01983	14.33767	0	211.52646
Littlerock Creek Irrigation District	Q AF	0	4.2	2300.0	76.4	0	0	2376.4
	C CFS	0	0.00691	3.17694	0.12575	0.23827	0	3.54096
Palmdale Water District	Q AF	0	31.3	17300.0	538.0	0	0	17838.0
	C CFS	0	0.05152	23.89612	0.88551	1.79221	0	26.57384
Ventura County Flood Control District	Q AF	0	36.4	20000.0	749.8	0	0	20749.8
	C CFS	0	0.05991	27.62557	1.15242	2.10390	0	30.88189
Castaic Lake Water Agency	Q AF	-12700.0	98.8	54200.0	2119.4	0	0	56319.4
	C CFS	-17.54224	0.16262	95.21429	3.26701	5.70156	0	104.18286
Kern County Water Agency (Municipal and Industrial)	Q AF	0	212.1	119600.0	1389.5	0	0	120989.5
	C CFS	0	0.34910	218.06521	2.28702	0	0	220.35223
Kern County Water Agency (Agriculture)	Q AF	-6400.0	1830.7	1033800.0	10293.3	0	0	1044093.3
	C CFS	-14.00000	3.01321	3058.92860	16.94207	0	0	3075.87067
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	83.4	45486.0	2059.2	0	0	47545.2
	C CFS	0	0.13727	62.82884	3.07267	4.83610	0	70.73761
San Luis Obispo County Flood Control and Water Conservation District	Q AF	0	45.2	25000.0	771.4	0	0	25771.4
	C CFS	0	0.07440	34.53197	1.18932	2.62135	0	38.34264
Dudley Ridge Water District	Q AF	57700.0	101.3	57700.0	101.3	0	0	57801.3
	C CFS	172.15151	0.16673	172.15151	0.16673	0	0	172.31824
Tulare Lake Basin Water Storage District	Q AF	57450.0	100.9	57450.0	100.9	0	0	57550.9
	C CFS	171.40562	0.16607	171.40562	0.16607	0	0	171.57169
Future Contractor - San Joaquin	Q AF	0	21.6	12214.0	106.0	0	0	12320.0
	C CFS	0	0.03555	16.87094	0.17447	1.26532	0	18.31073
TOTALS	Q AF	96050.0	7000.0	3861450.0	130800.0	0	0	3992250.0
	C CFS	312.01489	11.52152	7368.24839	204.64880	225.29194	0	7798.18913



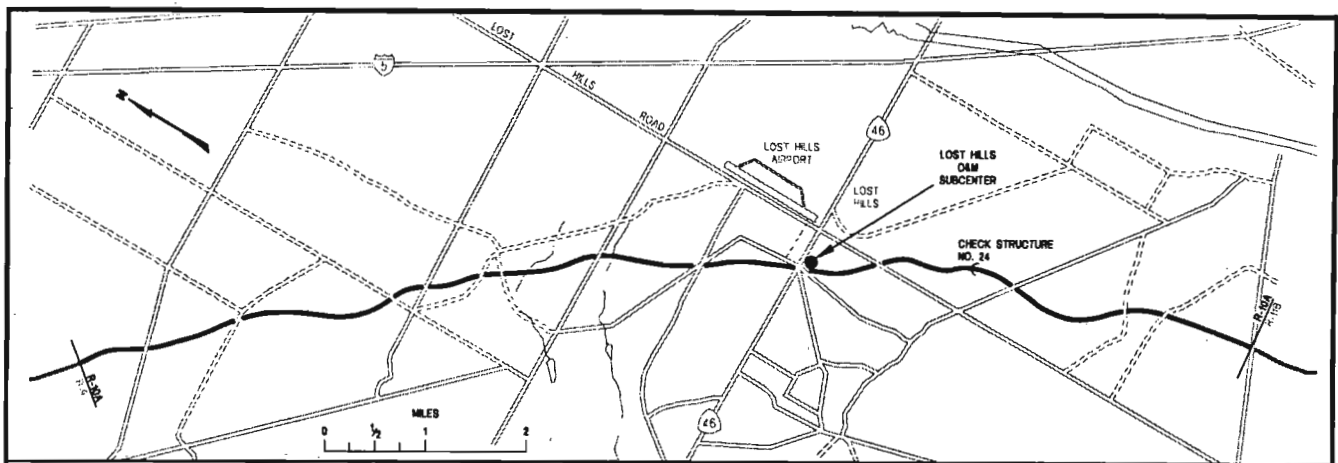
Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
MILHAM AVENUE THRU AVENAL GAP - REACH 8D							
0.52769306			2106682.6	0.52769306		Q AF	The Metropolitan Water District of Southern California
0.40967761	0.46868533	188.00000	3382.74352	0.42357418	0.47563362	C CFS	San Bernardino Valley Municipal Water District
0.02709973			108188.9	0.02709973		Q AF	San Gabriel Valley Municipal Water District
0.02334792	0.02522383	0	182.07152	0.02279830	0.02494901	C CFS	San Geronio Pass Water Agency
0.00760694			30368.8	0.00760694		Q AF	Crestline-Lake Arrowhead Water Agency
0.00627506	0.00694100	0	48.93407	0.00612734	0.00686714	C CFS	Mojave Water Agency
0.00456950			18242.6	0.00456950		Q AF	Desert Water Agency
0.00393626	0.00425288	0	30.69568	0.00384360	0.00420655	C CFS	Coachella Valley County Water District
0.00153194			6115.9	0.00153194		Q AF	Antelope Valley-East Kern Water Agency
0.00132070	0.00142632	0	10.29909	0.00128961	0.00141078	C CFS	Little Rock Creek Irrigation District
0.01331986			53176.2	0.01331986		Q AF	Palmdale Water District
0.01017450	0.01174718	0	79.34268	0.00993499	0.01162742	C CFS	Ventura County Flood Control District
0.00998986			39882.0	0.00998986		Q AF	Castaic Lake Water Agency
0.00861274	0.00930130	0	67.16376	0.00840999	0.00919992	C CFS	Kern County Water Agency (Municipal and Industrial)
0.00605683			24180.4	0.00605683		Q AF	Kern County Water Agency (Agriculture)
0.00522288	0.00563986	0	40.72897	0.00509993	0.00557838	C CFS	Santa Barbara County Flood Control and Water Conservation District
0.03558329			142057.4	0.03558329		Q AF	San Luis Obispo County Flood Control and Water Conservation District
0.02712507	0.03135418	0	211.52646	0.02648653	0.03103491	C CFS	Dudley Ridge Water District
0.00059525			2376.4	0.00059525		Q AF	Tulare Lake Basin Water Storage District
0.00045407	0.00052466	0	3.54096	0.00044338	0.00051932	C CFS	Future Contractor - San Joaquin
0.00446816			17838.0	0.00446816		Q AF	
0.00340769	0.00393793	0	26.57384	0.00332747	0.00389782	C CFS	
0.00519752			20749.8	0.00519752		Q AF	
0.00396014	0.00457883	0	30.88189	0.00386691	0.00453222	C CFS	
0.01410718			56319.4	0.01410718		Q AF	
0.01335988	0.01373353	0	104.18286	0.01304538	0.01357628	C CFS	
0.03030609			120989.5	0.03030609		Q AF	
0.02825685	0.02928147	0	220.35223	0.02759166	0.02894888	C CFS	
0.26153004			1044093.3	0.26153004		Q AF	
0.39443397	0.32798200	0	3075.87067	0.38514874	0.32333939	C CFS	
0.01190937			47545.2	0.01190937		Q AF	
0.00907103	0.01049020	0	70.73761	0.00885749	0.01038343	C CFS	
0.00645536			25771.4	0.00645536		Q AF	
0.00491687	0.00568611	0	38.34264	0.00480112	0.00562824	C CFS	
0.01447838			57801.3	0.01447838		Q AF	
0.02209721	0.01828779	0	172.31824	0.02157703	0.01802770	C CFS	
0.01441566			57550.9	0.01441566		Q AF	
0.02200148	0.01820857	0	171.57169	0.02148355	0.01794960	C CFS	
0.00308598			12320.0	0.00308598		Q AF	
0.00234807	0.00271703	0	18.31073	0.00229280	0.00268939	C CFS	
1.00000000			3992250.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	188.00000	7986.18913	1.00000000	1.00000000	C CFS	

TABLES B-1 & B-2  
Proportionate Use of Each Aqueduct Reach (Continued)  
(in units as indicated)

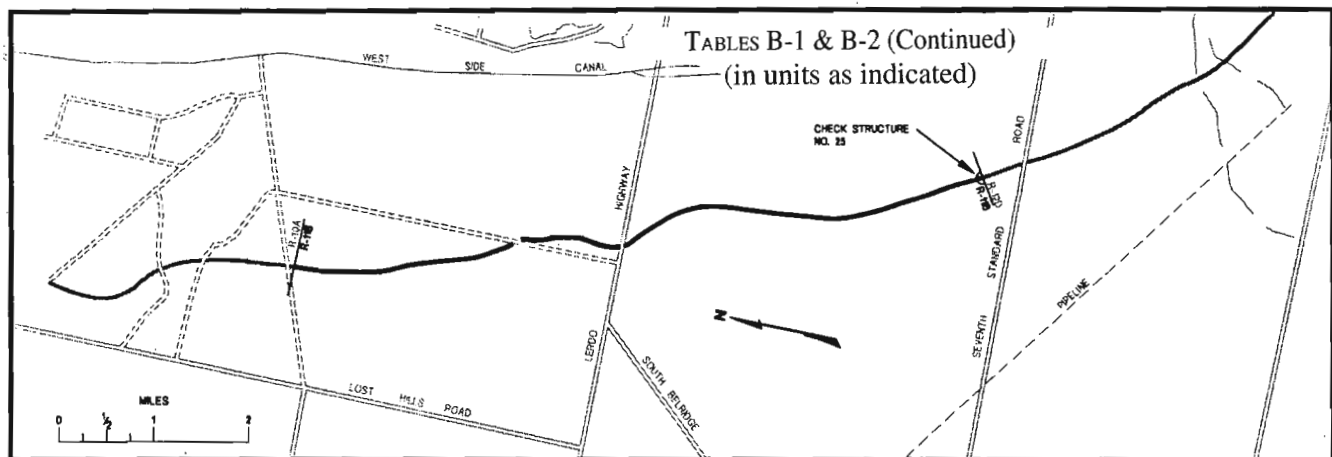


Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of			Subtotal
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 9 - AVENAL GAP THRU TWISSELMAN ROAD								
The Metropolitan Water District of Southern California	Q AF	0	3766.5	2011500.0	91488.7	0	0	2102988.7
	C CFS	0	6.19940	2863.14266	140.94579	184.57517	0	3188.66362
San Bernardino Valley Municipal Water District	Q AF	0	193.4	102600.0	5399.2	0	0	107999.2
	C CFS	0	0.31832	172.33413	8.68706	0.73809	0	181.75928
San Gabriel Valley Municipal Water District	Q AF	0	54.3	28800.0	1515.6	0	0	30315.6
	C CFS	0	0.08937	45.15128	2.43853	1.2567	0	48.84651
San Geronio Pass Water Agency	Q AF	0	32.6	17300.0	910.6	0	0	18210.6
	C CFS	0	0.05366	29.05110	1.46512	0.12679	0	30.64301
Crestline-Lake Arrowhead Water Agency	Q AF	0	10.9	5800.0	305.2	0	0	6105.2
	C CFS	0	0.01794	9.75185	0.49106	0.03857	0	10.28148
Mojave Water Agency	Q AF	0	95.1	50800.0	2283.0	0	0	53083.0
	C CFS	0	0.15653	70.16895	3.75766	5.26267	0	79.18928
Desert Water Agency	Q AF	0	71.3	38100.0	1712.1	0	0	39812.1
	C CFS	0	0.11735	63.98091	2.81800	0.24980	0	67.04871
Coachella Valley County Water District	Q AF	0	43.2	23100.0	1038.0	0	0	24138.0
	C CFS	0	0.07110	38.80294	1.70848	0.14777	0	40.65919
Antelope Valley-East Kern Water Agency	Q AF	0	254.0	138400.0	3408.3	0	0	141808.3
	C CFS	0	0.41807	191.16896	5.60883	14.33767	0	211.11646
Littlerock Creek Irrigation District	Q AF	0	4.3	2300.0	72.2	0	0	2372.2
	C CFS	0	0.00708	3.17694	0.11884	0.23827	0	3.53405
Palmdale Water District	Q AF	0	31.9	17300.0	506.7	0	0	17806.7
	C CFS	0	0.05251	23.89612	0.83399	1.79221	0	26.52232
Ventura County Flood Control District	Q AF	0	37.1	20000.0	713.4	0	0	20713.4
	C CFS	0	0.06106	27.62557	1.09251	2.10390	0	30.82198
Castaic Lake Water Agency	Q AF	0	100.5	54200.0	1932.9	0	0	56132.9
	C CFS	0	0.16542	74.86530	2.96004	5.70156	0	83.52690
Kern County Water Agency (Municipal and Industrial)	Q AF	0	216.3	119600.0	1177.4	0	0	120777.4
	C CFS	0	0.35601	218.06521	1.93792	0	0	220.00313
Kern County Water Agency (Agriculture)	Q AF	46900.0	1688.6	935100.0	7736.7	0	0	942836.7
	C CFS	139.92905	2.77932	2789.92860	12.73408	0	0	2802.66268
TOTALS	Q AF	46900.0	6600.0	3564900.0	120200.0	0	0	3685100.0
	C CFS	139.92905	10.86315	6621.11052	187.59890	216.56917	0	7025.27859
REACH 10A - TWISSELMAN ROAD THRU LOST HILLS								
The Metropolitan Water District of Southern California	Q AF	0	4046.3	2011500.0	87722.2	0	0	2099222.2
	C CFS	0	6.65993	2863.14266	134.74639	184.57517	0	3182.46422
San Bernardino Valley Municipal Water District	Q AF	0	207.8	102600.0	5205.8	0	0	107805.8
	C CFS	0	0.34202	172.33413	8.36874	0.73809	0	181.44096
San Gabriel Valley Municipal Water District	Q AF	0	58.3	28800.0	1461.3	0	0	30261.3
	C CFS	0	0.09596	45.15128	2.34915	1.25670	0	48.75713
San Geronio Pass Water Agency	Q AF	0	35.0	17300.0	878.0	0	0	18178.0
	C CFS	0	0.05761	29.05110	1.41147	0.12679	0	30.58936
Crestline-Lake Arrowhead Water Agency	Q AF	0	11.7	5800.0	294.3	0	0	6094.3
	C CFS	0	0.01926	9.75185	0.47312	0.03857	0	10.26354
Mojave Water Agency	Q AF	0	102.1	50800.0	2187.9	0	0	52987.9
	C CFS	0	0.16805	70.16895	3.60113	5.26267	0	79.03275
Desert Water Agency	Q AF	0	76.6	38100.0	1640.8	0	0	39740.8
	C CFS	0	0.12608	63.98091	2.70064	0.24980	0	66.93135
Coachella Valley County Water District	Q AF	0	46.4	23100.0	994.8	0	0	24094.8
	C CFS	0	0.07637	38.80294	1.63737	0.14777	0	40.58808
Antelope Valley-East Kern Water Agency	Q AF	0	272.9	138400.0	3154.3	0	0	141554.3
	C CFS	0	0.44917	191.16896	5.19176	14.33767	0	210.69839
Littlerock Creek Irrigation District	Q AF	0	4.6	2300.0	67.9	0	0	2367.9
	C CFS	0	0.00757	3.17694	0.11176	0.23827	0	3.52697
Palmdale Water District	Q AF	0	34.3	17300.0	474.8	0	0	17774.8
	C CFS	0	0.05646	23.89612	0.78149	1.79221	0	26.46982
Ventura County Flood Control District	Q AF	0	39.9	20000.0	676.3	0	0	20676.3
	C CFS	0	0.06567	27.62557	1.03144	2.10390	0	30.76091
Castaic Lake Water Agency	Q AF	0	108.0	54200.0	1832.4	0	0	56032.4
	C CFS	0	0.17776	74.86530	2.79462	5.70156	0	83.36148
Kern County Water Agency (Municipal and Industrial)	Q AF	0	232.4	119600.0	961.1	0	0	120561.1
	C CFS	0	0.38251	218.06521	1.58190	0	0	219.64711
Kern County Water Agency (Agriculture)	Q AF	265800.0	1723.7	888200.0	6048.1	0	0	894248.1
	C CFS	793.03071	2.83709	2649.99955	9.95476	0	0	2659.95431
TOTALS	Q AF	265800.0	7000.0	3518000.0	113600.0	0	0	3631600.0
	C CFS	793.03071	11.52152	6481.18147	176.73575	216.56917	0	6874.48639

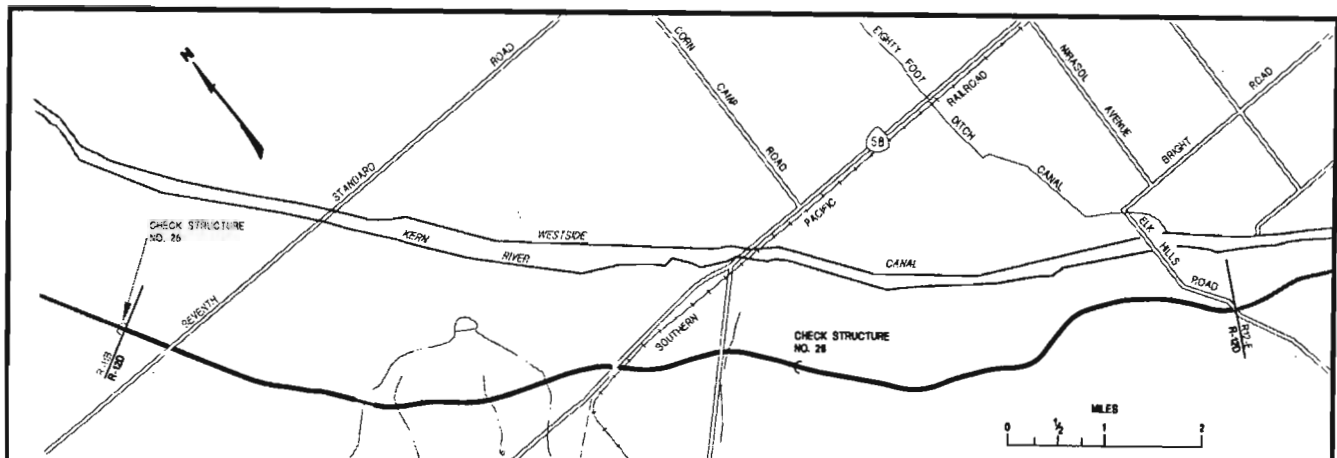




Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
AVENAL GAP THRU TWISSELMAN ROAD - REACH 9							
0.57067344	0.51227887	188.00000	2102988.7	0.57067344	0.51939559	Q AF	The Metropolitan Water District
0.45388429			3376.66362	0.46811773		C CFS	of Southern California
0.02930699	0.02758959	0	107999.2	0.02930699	0.02725243	Q AF	San Bernardino Valley Municipal
0.02587218			181.75928	0.02519787		C CFS	Water District
0.00822653	0.00758975	0	30315.6	0.00822653	0.00749914	Q AF	San Gabriel Valley Municipal
0.00695296			48.84651	0.00677175		C CFS	Water District
0.00494168	0.00465175	0	18210.6	0.00494168	0.00459491	Q AF	San Geronio Pass Water Agency
0.00436182			30.64301	0.00424814		C CFS	
0.00165673	0.00156011	0	6105.2	0.00165673	0.00154104	Q AF	Crestline-Lake Arrowhead Water Agency
0.00146350			10.28148	0.00142536		C CFS	
0.01440477	0.01283841	0	53083.0	0.01440477	0.01269152	Q AF	Mojave Water Agency
0.01127205			79.18928	0.01097826		C CFS	
0.01080353	0.01017373	0	39812.1	0.01080353	0.01004936	Q AF	Desert Water Agency
0.00954392			67.04871	0.00929518		C CFS	
0.00655016	0.00616886	0	24138.0	0.00655016	0.00609344	Q AF	Coachella Valley County Water District
0.00578756			40.65919	0.00563671		C CFS	
0.03848153	0.03426625	0	141808.3	0.03848153	0.03387464	Q AF	Antelope Valley-East Kern Water Agency
0.03005097			211.11646	0.02926775		C CFS	
0.00064373	0.00057339	0	2372.2	0.00064373	0.00056683	Q AF	Littlerock Creek Irrigation District
0.00050305			3.53405	0.00048994		C CFS	
0.00483208	0.00430367	0	17806.7	0.00483208	0.00425448	Q AF	Palmdale Water District
0.00377527			26.52232	0.00367688		C CFS	
0.00562085	0.00500407	0	20713.4	0.00562085	0.00494690	Q AF	Ventura County Flood Control District
0.00438730			30.82198	0.00427295		C CFS	
0.01523240	0.01356094	0	56132.9	0.01523240	0.01340600	Q AF	Castaic Lake Water Agency
0.01188948			83.52690	0.01157960		C CFS	
0.03277453	0.03204523	0	120777.4	0.03277453	0.03163713	Q AF	Kern County Water Agency
0.03131593			220.00313	0.03049974		C CFS	(Municipal and Industrial)
0.25585105	0.32739538	0	942836.7	0.25585105	0.32219659	Q AF	Kern County Water Agency
0.39893972			2802.66268	0.38854214		C CFS	(Agriculture)
1.00000000	1.00000000	188.00000	3685100.0	1.00000000	1.00000000	Q AF	TOTALS
1.00000000			7213.27859	1.00000000		C CFS	
TWISSELMAN ROAD THRU LOST HILLS - REACH 10A							
0.57804334	0.52049091	188.00000	2099222.2	0.57804334	0.52763907	Q AF	The Metropolitan Water District
0.46293847			3370.46422	0.47723479		C CFS	of Southern California
0.02968548	0.02803943	0	107805.8	0.02968548	0.02768814	Q AF	San Bernardino Valley Municipal
0.02639339			181.44096	0.02569080		C CFS	Water District
0.00833277	0.00771262	0	30261.3	0.00833277	0.00761823	Q AF	San Gabriel Valley Municipal
0.00709248			48.75713	0.00690368		C CFS	Water District
0.00500551	0.00449699	0	18178.0	0.00500551	0.00466838	Q AF	San Geronio Pass Water Agency
0.00449699			30.58936	0.00433124		C CFS	
0.00167813	0.00158556	0	6094.3	0.00167813	0.00156569	Q AF	Crestline-Lake Arrowhead Water Agency
0.00149299			10.26354	0.00145325		C CFS	
0.01459079	0.01304366	0	52987.9	0.01459079	0.01289064	Q AF	Mojave Water Agency
0.01149653			79.03275	0.01119050		C CFS	
0.01094306	0.01033963	0	39740.8	0.01094306	0.01021004	Q AF	Desert Water Agency
0.00973620			66.93135	0.00947702		C CFS	
0.00663476	0.00626946	0	24094.8	0.00663476	0.00619088	Q AF	Coachella Valley County Water District
0.00590416			40.58808	0.00574700		C CFS	
0.03897850	0.03481391	0	141554.3	0.03897850	0.03440598	Q AF	Antelope Valley-East Kern Water Agency
0.03064933			210.69839	0.02983346		C CFS	
0.00065203	0.00058254	0	2367.9	0.00065203	0.00057571	Q AF	Littlerock Creek Irrigation District
0.00051305			3.52697	0.00049939		C CFS	
0.00489448	0.00437246	0	17774.8	0.00489448	0.00432121	Q AF	Palmdale Water District
0.00385044			26.46982	0.00374795		C CFS	
0.00569344	0.00508405	0	20676.3	0.00569344	0.00502449	Q AF	Ventura County Flood Control District
0.00447465			30.76091	0.00435554		C CFS	
0.01542912	0.01377767	0	56032.4	0.01542912	0.01361627	Q AF	Castaic Lake Water Agency
0.01212621			83.36148	0.01180342		C CFS	
0.03319779	0.03257442	0	120561.1	0.03319779	0.03214916	Q AF	Kern County Water Agency
0.03195106			219.64711	0.03110054		C CFS	(Municipal and Industrial)
0.24624080	0.31658608	0	894248.1	0.24624080	0.31143611	Q AF	Kern County Water Agency
0.38693135			2659.95431	0.37663142		C CFS	(Agriculture)
1.00000000	1.00000000	188.00000	3631600.0	1.00000000	1.00000000	Q AF	TOTALS
1.00000000			7062.48639	1.00000000		C CFS	

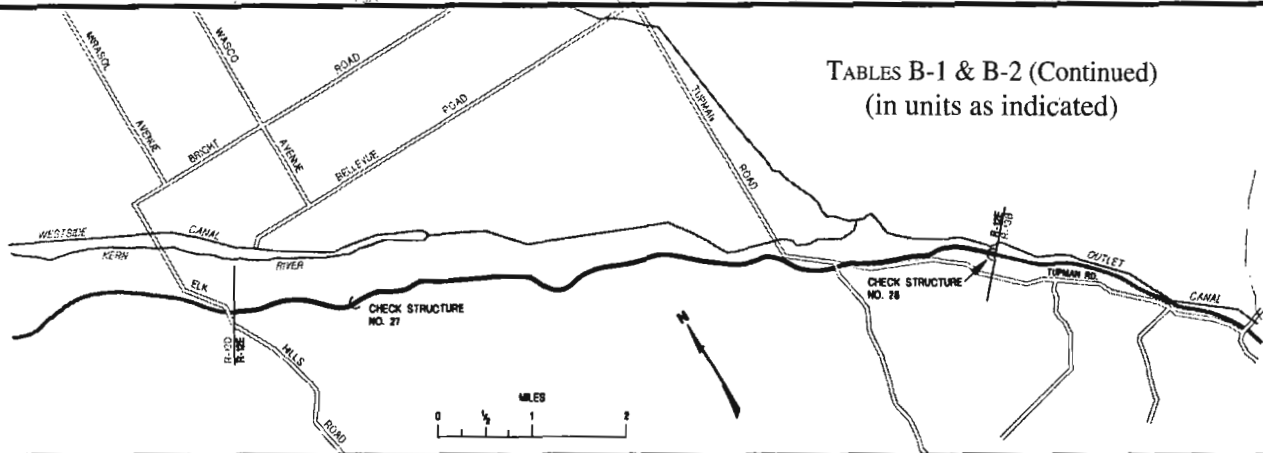


Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of			Subtotal
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 11B - LOST HILLS TO 7TH STANDARD ROAD								
The Metropolitan Water District of Southern California	Q AF	0	2432.8	2011500.0	83675.9	0	0	2095175.9
	C CFS	0	4.00422	2863.1426	128.08645	184.57517	0	3175.80428
San Bernardino Valley Municipal Water District	Q AF	0	124.9	102600.0	4998.0	0	0	107598.0
	C CFS	0	0.20558	172.33413	8.02672	0.73809	0	181.09894
San Gabriel Valley Municipal Water District	Q AF	0	35.1	28800.0	1403.0	0	0	30203.0
	C CFS	0	0.05777	45.15128	2.25319	1.25670	0	48.66117
San Gorgonio Pass Water Agency	Q AF	0	21.1	17300.0	843.0	0	0	18143.0
	C CFS	0	0.03473	29.05110	1.35386	0.12679	0	30.53175
Crestline-Lake Arrowhead Water Agency	Q AF	0	7.1	5800.0	282.6	0	0	6082.6
	C CFS	0	0.01169	9.75185	0.45386	0.03857	0	10.24428
Mojave Water Agency	Q AF	0	61.4	50800.0	2085.8	0	0	52885.8
	C CFS	0	0.10106	70.16895	3.43308	5.26267	0	78.86470
Desert Water Agency	Q AF	0	46.1	38100.0	1564.2	0	0	39664.2
	C CFS	0	0.07588	63.98091	2.57457	0.24980	0	66.80528
Coachella Valley County Water District	Q AF	0	27.9	23100.0	948.4	0	0	24048.4
	C CFS	0	0.04592	38.80294	1.56100	0.14777	0	40.51171
Antelope Valley-East Kern Water Agency	Q AF	0	164.0	138400.0	2881.4	0	0	141281.4
	C CFS	0	0.26993	191.16896	4.74259	14.33767	0	210.24922
Littlerock Creek Irrigation District	Q AF	0	2.7	2300.0	63.3	0	0	2363.3
	C CFS	0	0.00444	3.17694	0.10419	0.23827	0	3.51940
Palmdale Water District	Q AF	0	20.6	17300.0	440.5	0	0	17740.5
	C CFS	0	0.03391	23.89612	0.72503	1.79221	0	26.41336
Ventura County Flood Control District	Q AF	0	24.0	20000.0	636.4	0	0	20636.4
	C CFS	0	0.03950	27.62557	0.96577	2.10390	0	30.69524
Castaic Lake Water Agency	Q AF	0	64.9	54200.0	1724.4	0	0	55924.4
	C CFS	0	0.10682	74.86530	2.61686	5.70156	0	83.18372
Kern County Water Agency (Municipal and Industrial)	Q AF	0	139.7	119600.0	728.7	0	0	120328.7
	C CFS	0	0.22994	218.06521	1.19939	0	0	219.26460
Kern County Water Agency (Agriculture)	Q AF	126300.0	727.7	622400.0	4324.4	0	0	626724.4
	C CFS	376.82385	1.19774	1856.9688	7.11767	0	0	1864.08651
TOTALS	Q AF	126300.0	3900.0	3252200.0	106600.0	0	0	3358800.0
	C CFS	376.82385	6.41913	5688.1507	165.21423	216.56917	0	6069.93416
REACH 12D - 7TH STANDARD ROAD THRU ELK HILLS ROAD								
The Metropolitan Water District of Southern California	Q AF	0	4602.1	2011500.0	81243.1	0	0	2092743.1
	C CFS	0	7.57474	2863.1426	124.08223	184.57517	0	3171.80006
San Bernardino Valley Municipal Water District	Q AF	0	236.4	102600.0	4873.1	0	0	107473.1
	C CFS	0	0.38910	172.33413	7.82114	0.73809	0	180.89336
San Gabriel Valley Municipal Water District	Q AF	0	66.3	28800.0	1367.9	0	0	30167.9
	C CFS	0	0.10913	45.15128	2.19542	1.25670	0	48.60340
San Gorgonio Pass Water Agency	Q AF	0	39.9	17300.0	821.9	0	0	18121.9
	C CFS	0	0.06567	29.05110	1.31913	0.12679	0	30.49702
Crestline-Lake Arrowhead Water Agency	Q AF	0	13.4	5800.0	275.5	0	0	6075.5
	C CFS	0	0.02206	9.75185	0.44218	0.03857	0	10.23260
Mojave Water Agency	Q AF	0	116.2	50800.0	2024.4	0	0	52824.4
	C CFS	0	0.19126	70.16895	3.33202	5.26267	0	78.76364
Desert Water Agency	Q AF	0	87.1	38100.0	1518.1	0	0	39618.1
	C CFS	0	0.14336	63.98091	2.49869	0.24980	0	66.72940
Coachella Valley County Water District	Q AF	0	52.8	23100.0	920.5	0	0	24020.5
	C CFS	0	0.08691	38.80294	1.51508	0.14777	0	40.46579
Antelope Valley-East Kern Water Agency	Q AF	0	310.3	138400.0	2717.4	0	0	141117.4
	C CFS	0	0.51073	191.16896	4.47265	14.33767	0	209.97928
Littlerock Creek Irrigation District	Q AF	0	5.2	2300.0	60.6	0	0	2360.6
	C CFS	0	0.00856	3.17694	0.09974	0.23827	0	3.51495
Palmdale Water District	Q AF	0	39.0	17300.0	419.9	0	0	17719.9
	C CFS	0	0.06419	23.89612	0.69113	1.79221	0	26.37946
Ventura County Flood Control District	Q AF	0	45.3	20000.0	612.4	0	0	20612.4
	C CFS	0	0.07456	27.62557	0.92627	2.10390	0	30.65574
Castaic Lake Water Agency	Q AF	0	122.8	54200.0	1659.5	0	0	55859.5
	C CFS	0	0.20212	74.86530	2.51004	5.70156	0	83.07690
Kern County Water Agency (Municipal and Industrial)	Q AF	0	264.3	119600.0	589.0	0	0	120189.0
	C CFS	0	0.43502	218.06521	0.96945	0	0	219.03466
Kern County Water Agency (Agriculture)	Q AF	3700.0	1098.9	496100.0	3596.7	0	0	499696.7
	C CFS	11.03918	1.80871	1480.1449	5.91992	0	0	1486.06491
TOTALS	Q AF	3700.0	7100.0	3125900.0	102700.0	0	0	3228600.0
	C CFS	11.03918	11.68611	5311.3269	158.79510	216.56917	0	5686.69118

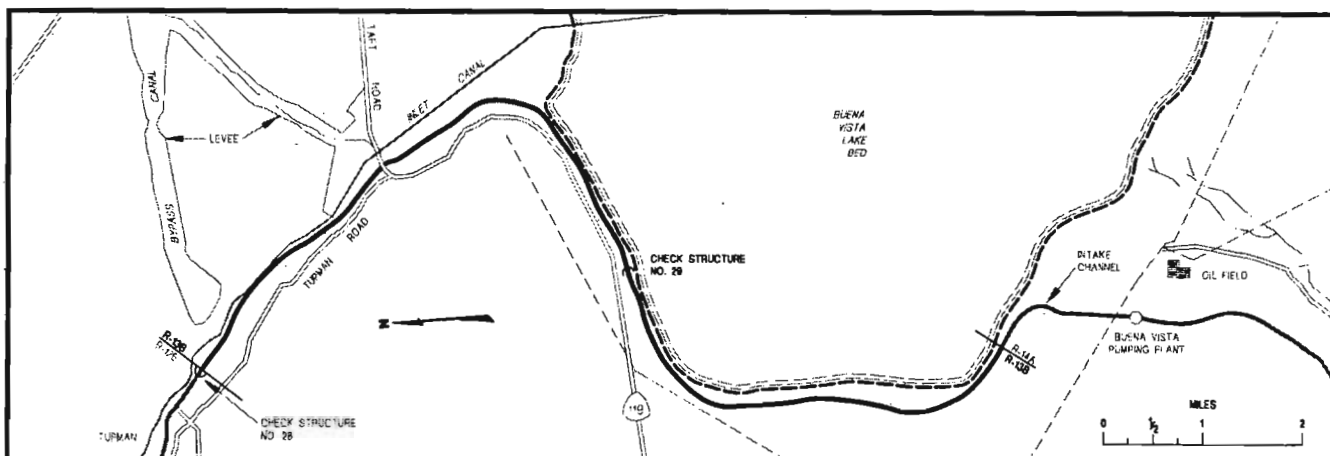


Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
LOST HILLS TO 7TH STANDARD ROAD - REACH 11B							
0.62378704			2095175.9	0.62378704		Q AF	The Metropolitan Water District
0.52320243	0.57349473	188.00000	3363.80428	0.53752631	0.58065667	C CFS	of Southern California
0.03203466			107598.0	0.03203466		Q AF	San Bernardino Valley Municipal
0.02983540	0.03093503	0	181.09894	0.02893909	0.03048687	C CFS	Water District
0.00899220			30203.0	0.00899220		Q AF	San Gabriel Valley Municipal
0.00801675	0.00850448	0	48.66117	0.00777592	0.00838406	C CFS	Water District
0.00540163			18143.0	0.00540163		Q AF	San Gorgonio Pass Water Agency
0.00503000	0.00521581	0	30.53175	0.00487889	0.00514026	C CFS	
0.00181094			6082.6	0.00181094		Q AF	Crestline-Lake Arrowhead Water Agency
0.00168771	0.00174933	0	10.24428	0.00163701	0.00172398	C CFS	
0.01574544			52885.8	0.01574544		Q AF	Mojave Water Agency
0.01299268	0.01436906	0	78.86470	0.01260235	0.01417390	C CFS	
0.01180904			39664.2	0.01180904		Q AF	Desert Water Agency
0.01100593	0.01140749	0	66.80528	0.01087529	0.01124216	C CFS	
0.00715982			24048.4	0.00715982		Q AF	Coachella Valley County Water District
0.00667416	0.00691699	0	40.51171	0.00647366	0.00681674	C CFS	
0.04206306			141281.4	0.04206306		Q AF	Antelope Valley-East Kern Water Agency
0.03463781	0.03835043	0	210.24922	0.03359722	0.03783014	C CFS	
0.00070361			2363.3	0.00070361		Q AF	Little Rock Creek Irrigation District
0.00057981	0.00064171	0	3.51940	0.00056239	0.00063300	C CFS	
0.00528180			17740.5	0.00528180		Q AF	Palmdale Water District
0.00435151	0.00481665	0	26.41336	0.00422078	0.00475129	C CFS	
0.00614398			20636.4	0.00614398		Q AF	Ventura County Flood Control District
0.00505693	0.00560046	0	30.69524	0.00490501	0.00552450	C CFS	
0.01665011			55924.4	0.01665011		Q AF	Castaic Lake Water Agency
0.01370422	0.01517717	0	83.18372	0.01329252	0.01497132	C CFS	
0.03582491			120328.7	0.03582491		Q AF	Kern County Water Agency
0.03612306	0.03597398	0	219.26460	0.03503786	0.03543138	C CFS	(Municipal and Industrial)
0.18659176			626724.4	0.18659176		Q AF	Kern County Water Agency
0.30710160	0.24684668	0	1864.08651	0.29787570	0.24223373	C CFS	(Agriculture)
1.00000000			3358800.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	188.00000	6257.93416	1.00000000	1.00000000	C CFS	
7TH STANDARD ROAD THRU ELK HILLS ROAD - REACH 12D							
0.64818903			2092743.1	0.64818903		Q AF	The Metropolitan Water District
0.55775845	0.60297374	188.00000	3359.80006	0.57191092	0.61004998	C CFS	of Southern California
0.03328783			107473.1	0.03328783		Q AF	San Bernardino Valley Municipal
0.03180995	0.03254889	0	180.89336	0.03079198	0.03203990	C CFS	Water District
0.00934396			30167.9	0.00934396		Q AF	San Gabriel Valley Municipal
0.00854687	0.00894541	0	48.60340	0.00827335	0.00880866	C CFS	Water District
0.00561293			18121.9	0.00561293		Q AF	San Gorgonio Pass Water Agency
0.00536288	0.00548790	0	30.49702	0.00519126	0.00540209	C CFS	
0.00188178			6075.5	0.00188178		Q AF	Crestline-Lake Arrowhead Water Agency
0.00179939	0.00184059	0	10.23260	0.00174181	0.00181179	C CFS	
0.01636140			52824.4	0.01636140		Q AF	Mojave Water Agency
0.01385052	0.01510596	0	78.76364	0.01340728	0.01488434	C CFS	
0.01227098			39618.1	0.01227098		Q AF	Desert Water Agency
0.01173431	0.01200265	0	66.72940	0.01135879	0.01181489	C CFS	
0.00743991			24020.5	0.00743991		Q AF	Coachella Valley County Water District
0.00711588	0.00727790	0	40.46579	0.00688816	0.00716403	C CFS	
0.04370854			141117.4	0.04370854		Q AF	Antelope Valley-East Kern Water Agency
0.03692468	0.04031661	0	209.97928	0.03574303	0.03972579	C CFS	
0.00073115			2360.6	0.00073115		Q AF	Little Rock Creek Irrigation District
0.00061810	0.00067463	0	3.51495	0.00059832	0.00066474	C CFS	
0.00548842			17719.9	0.00548842		Q AF	Palmdale Water District
0.00463881	0.00506361	0	26.37946	0.00449036	0.00498939	C CFS	
0.00638432			20612.4	0.00638432		Q AF	Ventura County Flood Control District
0.00539079	0.00588755	0	30.65574	0.00521827	0.00580129	C CFS	
0.01730146			55859.5	0.01730146		Q AF	Castaic Lake Water Agency
0.01460900	0.01595523	0	83.07690	0.01414149	0.01572148	C CFS	
0.03722635			120189.0	0.03722635		Q AF	Kern County Water Agency
0.03851707	0.03787171	0	219.03466	0.03728446	0.03725540	C CFS	(Municipal and Industrial)
0.15477194			499696.7	0.15477194		Q AF	Kern County Water Agency
0.26132330	0.20804762	0	1486.06491	0.25296052	0.20386623	C CFS	(Agriculture)
1.00000000			3228600.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	188.00000	5874.69118	1.00000000	1.00000000	C CFS	

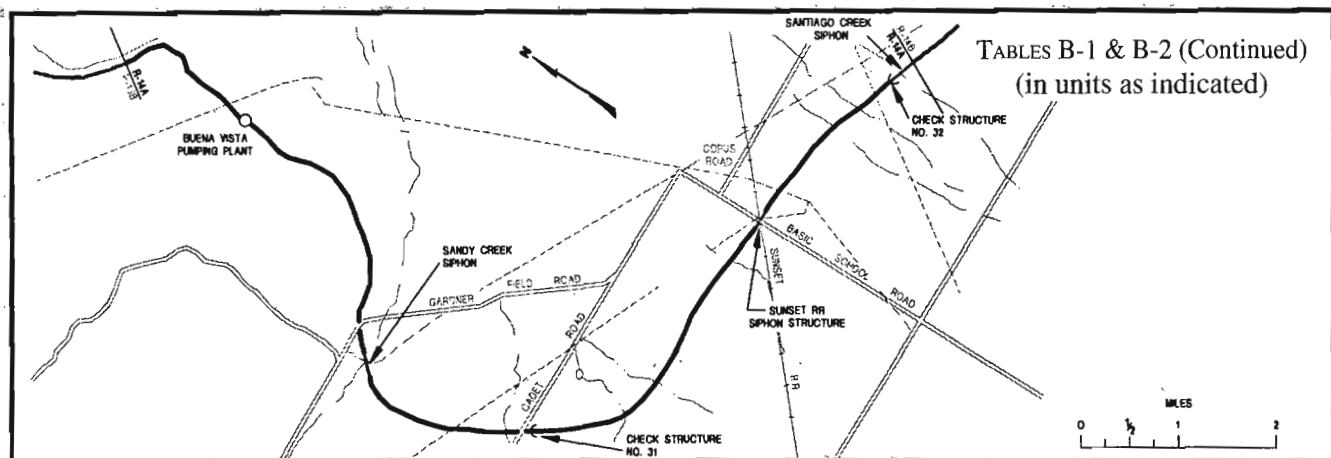
TABLES B-1 & B-2 (Continued)  
(in units as indicated)



Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of			Subtotal
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>REACH 12E - ELK HILLS ROAD THRU TUPMAN ROAD</b>								
The Metropolitan Water District of Southern California	Q AF	0	2141.5	2011500.0	76641.0	0	0	2088141.0
	C CFS	0	3,52476	2863.14266	116.50749	184.57517	0	3164.22532
San Bernardino Valley Municipal Water District	Q AF	0	110.0	102600.0	4636.7	0	0	107236.7
	C CFS	0	0.18105	172.33413	7.43204	0.73809	0	180.50426
San Gabriel Valley Municipal Water District	Q AF	0	30.9	28800.0	1301.6	0	0	30101.6
	C CFS	0	0.05086	45.15128	2.08630	1.25670	0	48.49428
San Geronimo Pass Water Agency	Q AF	0	18.5	17300.0	782.0	0	0	18082.0
	C CFS	0	0.03045	29.05110	1.25346	0.12679	0	30.43135
Crestline-Lake Arrowhead Water Agency	Q AF	0	6.2	5800.0	262.1	0	0	6062.1
	C CFS	0	0.01020	9.75185	0.42012	0.03857	0	10.21054
Mojave Water Agency	Q AF	0	54.1	50800.0	1908.2	0	0	52708.2
	C CFS	0	0.08904	70.16895	3.14077	5.26267	0	78.57239
Desert Water Agency	Q AF	0	40.5	38100.0	1431.0	0	0	39531.0
	C CFS	0	0.06666	63.98091	2.35533	0.24980	0	66.58604
Coachella Valley County Water District	Q AF	0	24.6	23100.0	867.7	0	0	23967.7
	C CFS	0	0.04049	38.80294	1.42817	0.14777	0	40.37888
Antelope Valley-East Kern Water Agency	Q AF	0	144.4	138400.0	2407.1	0	0	140807.1
	C CFS	0	0.23767	191.16896	3.96192	14.33767	0	209.46855
Little Rock Creek Irrigation District	Q AF	0	2.4	2300.0	55.4	0	0	2355.4
	C CFS	0	0.00395	3.17694	0.09118	0.23827	0	3.50639
Palmdale Water District	Q AF	0	18.1	17300.0	380.9	0	0	17680.9
	C CFS	0	0.02979	23.89612	0.62694	1.79221	0	26.31527
Ventura County Flood Control District	Q AF	0	21.1	20000.0	567.1	0	0	20567.1
	C CFS	0	0.03473	27.62557	0.85171	2.10390	0	30.58118
Castaic Lake Water Agency	Q AF	0	57.2	54200.0	1536.7	0	0	55736.7
	C CFS	0	0.09415	74.86530	2.30792	5.70156	0	82.87478
Kern County Water Agency (Municipal and Industrial)	Q AF	77400.0	123.0	119600.0	324.7	0	0	119924.7
	C CFS	141.12247	0.20245	218.06521	0.53443	0	0	218.59964
Kern County Water Agency (Agriculture)	Q AF	130800.0	507.5	492400.0	2497.8	0	0	494897.8
	C CFS	390.24988	0.83531	1469.10581	4.11121	0	0	1473.21702
<b>TOTALS</b>	Q AF	208200.0	3300.0	3122200.0	95600.0	0	0	3217800.0
	C CFS	531.37235	5.43157	5300.28773	147.10899	216.56917	0	5663.96589
<b>REACH 13B - TUPMAN ROAD TO BUENA VISTA PUMPING PLANT</b>								
The Metropolitan Water District of Southern California	Q AF	0	4232.6	2011500.0	74499.5	0	0	2085999.5
	C CFS	0	6.96657	2863.14266	112.98273	184.57517	0	3160.70056
San Bernardino Valley Municipal Water District	Q AF	0	217.4	102600.0	4526.7	0	0	107126.7
	C CFS	0	0.35783	172.33413	7.25099	0.73809	0	180.32321
San Gabriel Valley Municipal Water District	Q AF	0	61.0	28800.0	1270.7	0	0	30070.7
	C CFS	0	0.10040	45.15128	2.03544	1.25670	0	48.44342
San Geronimo Pass Water Agency	Q AF	0	36.7	17300.0	763.5	0	0	18063.5
	C CFS	0	0.06041	29.05110	1.22301	0.12679	0	30.40090
Crestline-Lake Arrowhead Water Agency	Q AF	0	12.3	5800.0	255.9	0	0	6055.9
	C CFS	0	0.02024	9.75185	0.40992	0.03857	0	10.20034
Mojave Water Agency	Q AF	0	106.8	50800.0	1854.1	0	0	52654.1
	C CFS	0	0.17579	70.16895	3.05172	5.26267	0	78.48334
Desert Water Agency	Q AF	0	80.1	38100.0	1390.5	0	0	39490.5
	C CFS	0	0.13184	63.98091	2.28867	0.24980	0	66.51938
Coachella Valley County Water District	Q AF	0	48.6	23100.0	843.1	0	0	23943.1
	C CFS	0	0.07999	38.80294	1.38768	0.14777	0	40.33839
Antelope Valley-East Kern Water Agency	Q AF	0	285.4	138400.0	2262.7	0	0	140662.7
	C CFS	0	0.46975	191.16896	3.72425	14.33767	0	209.23088
Little Rock Creek Irrigation District	Q AF	0	4.8	2300.0	53.0	0	0	2353.0
	C CFS	0	0.00790	3.17694	0.08723	0.23827	0	3.50244
Palmdale Water District	Q AF	0	35.8	17300.0	362.8	0	0	17662.8
	C CFS	0	0.05892	23.89612	0.59714	1.79221	0	26.28547
Ventura County Flood Control District	Q AF	0	41.7	20000.0	546.0	0	0	20546.0
	C CFS	0	0.06864	27.62557	0.81698	2.10390	0	30.54645
Castaic Lake Water Agency	Q AF	0	113.0	54200.0	1479.5	0	0	55679.5
	C CFS	0	0.18599	74.86530	2.21377	5.70156	0	82.78063
Kern County Water Agency (Municipal and Industrial)	Q AF	25200.0	86.0	42200.0	201.7	0	0	42401.7
	C CFS	45.94685	0.14155	76.94274	0.33198	0	0	77.27472
Kern County Water Agency (Agriculture)	Q AF	86800.0	737.8	361600.0	1990.3	0	0	363590.3
	C CFS	258.97316	1.21437	1078.85593	3.27590	0	0	1082.13183
<b>TOTALS</b>	Q AF	112000.0	6100.0	2914000.0	92300.0	0	0	3006300.0
	C CFS	304.92001	10.04018	4768.91538	141.67741	216.56917	0	5127.16196

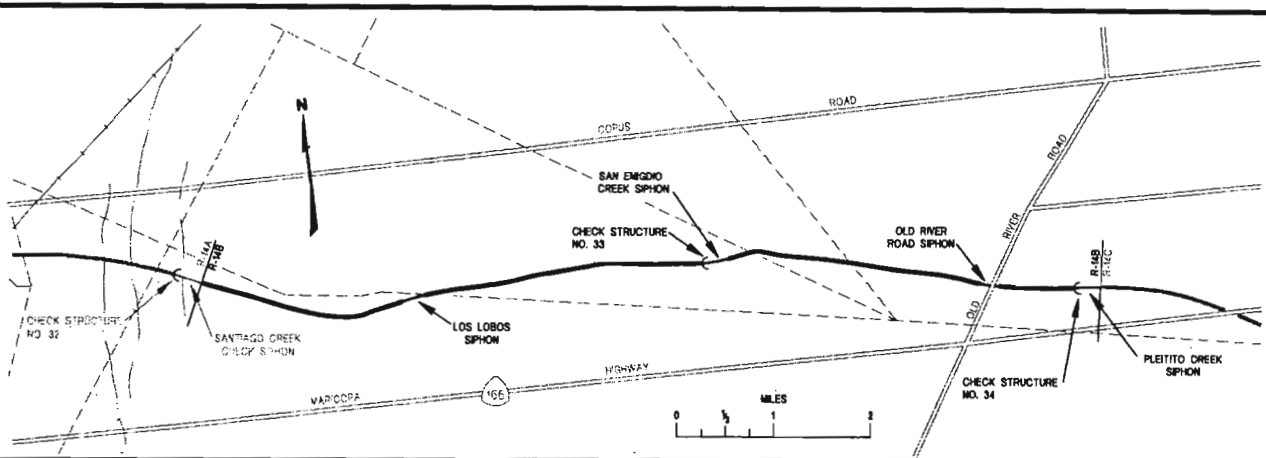


Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
ELK HILLS ROAD THRU TUPMAN ROAD - REACH 12E							
0.64893436			2088141.0	0.64893436		Q AF	The Metropolitan Water District of Southern California
0.55865897	0.60379667	188.00000	3352.22532	0.57283747	0.61088592	C CFS	San Bernardino Valley Municipal Water District
0.03332609	0.03259749	0	107236.7	0.03332609	0.03208558	Q AF	San Gabriel Valley Municipal Water District
0.03186888		0	180.50426	0.03084506		C CFS	San Geronimo Pass Water Agency
0.00935471	0.00895830	0	30101.6	0.00935471	0.00882077	Q AF	Crestline-Lake Arrowhead Water Agency
0.00856189		0	48.49428	0.00828684		C CFS	Mojave Water Agency
0.00561937	0.00549608	0	18082.0	0.00561937	0.00540978	Q AF	Desert Water Agency
0.00537280		0	30.43135	0.00520019		C CFS	Coachella Valley County Water District
0.00188393	0.00184332	0	6062.1	0.00188393	0.00184332	Q AF	Antelope Valley-East Kern Water Agency
0.00180272		0	10.21054	0.00174481	0.00181437	C CFS	Littlerock Creek Irrigation District
0.01638020	0.01512626	0	52708.2	0.01638020	0.01490343	Q AF	Palmdale Water District
0.01387233		0	78.57239	0.01342667		C CFS	Ventura County Flood Control District
0.01228510	0.01202059	0	39531.0	0.01228510	0.01183175	Q AF	Castaic Lake Water Agency
0.01175608		0	66.58604	0.01137840		C CFS	Kern County Water Agency (Municipal and Industrial)
0.00744847	0.00728878	0	23967.7	0.00744847	0.00717426	Q AF	Kern County Water Agency (Agriculture)
0.00712908		0	40.37888	0.00690005		C CFS	
0.04375881	0.04037074	0	140807.1	0.04375881	0.03977669	Q AF	
0.03698267		0	209.46855	0.03579456		C CFS	
0.00073199	0.00067553	0	2355.4	0.00073199	0.00066559	Q AF	
0.00061907		0	3.50639	0.00059918		C CFS	
0.00549472	0.00507040	0	17680.9	0.00549472	0.00499577	Q AF	
0.00464608		0	26.31527	0.00449682		C CFS	
0.00639167	0.00589546	0	20567.1	0.00639167	0.00580873	Q AF	
0.00539925		0	30.58118	0.00522580		C CFS	
0.01732137	0.01597665	0	55736.7	0.01732137	0.01574162	Q AF	
0.01463194		0	82.87478	0.01416187		C CFS	
0.03726916	0.03793198	0	119924.7	0.03726916	0.03731203	Q AF	
0.03859480		0	218.59964	0.03735491		C CFS	
0.15380005	0.20695175	0	494897.8	0.15380005	0.20277371	Q AF	
0.26010344		0	1473.21702	0.25174737		C CFS	
1.00000000	1.00000000	188.00000	3217800.0	1.00000000		Q AF	TOTALS
1.00000000			5851.96589	1.00000000	1.00000000	C CFS	
TUPMAN ROAD TO BUENA VISTA PUMPING PLANT - REACH 13B							
0.69387603	0.65516902	188.00000	2085999.5	0.69387603	0.66195198	Q AF	The Metropolitan Water District of Southern California
0.61646201		0	3348.70056	0.63002794		C CFS	San Bernardino Valley Municipal Water District
0.03563407	0.03540212	0	107126.7	0.03563407	0.03478013	Q AF	San Gabriel Valley Municipal Water District
0.03517018		0	180.32321	0.03392619		C CFS	San Geronimo Pass Water Agency
0.01000256	0.00972547	0	30070.7	0.01000256	0.00955838	Q AF	Crestline-Lake Arrowhead Water Agency
0.00944839		0	48.44342	0.00911419		C CFS	Mojave Water Agency
0.00600855	0.00596896	0	18063.5	0.00600855	0.00586410	Q AF	Desert Water Agency
0.00592938		0	30.40090	0.00571966		C CFS	Coachella Valley County Water District
0.00201440	0.00200194	0	6055.9	0.00201440	0.00196675	Q AF	Antelope Valley-East Kern Water Agency
0.00198947		0	10.20034	0.00191910		C CFS	Littlerock Creek Irrigation District
0.01751459	0.01641098	0	52654.1	0.01751459	0.01614026	Q AF	Palmdale Water District
0.01530736		0	78.48334	0.01476594		C CFS	Ventura County Flood Control District
0.01313591	0.01305492	0	39490.5	0.01313591	0.01282547	Q AF	Castaic Lake Water Agency
0.01297392		0	66.51938	0.01251502		C CFS	Kern County Water Agency (Municipal and Industrial)
0.00796431	0.00791595	0	23943.1	0.00796431	0.00777681	Q AF	Kern County Water Agency (Agriculture)
0.00786759		0	40.33839	0.00758931		C CFS	
0.04678931	0.04379882	0	140662.7	0.04678931	0.04307711	Q AF	
0.04080832		0	209.23088	0.03936491		C CFS	
0.00078269	0.00073290	0	2353.0	0.00078269	0.00072082	Q AF	
0.00068311		0	3.50244	0.00065895		C CFS	
0.00587526	0.00550099	0	17662.8	0.00587526	0.00541032	Q AF	
0.00512671		0	26.28547	0.00494538		C CFS	
0.00683431	0.00639604	0	20546.0	0.00683431	0.00629068	Q AF	
0.00595777		0	30.54645	0.00574704		C CFS	
0.01852094	0.01733322	0	55679.5	0.01852094	0.01704769	Q AF	
0.01614551		0	82.78063	0.01557443		C CFS	
0.01410428	0.01458796	0	42401.7	0.01410428	0.01432141	Q AF	
0.01507164		0	77.27472	0.01453855		C CFS	
0.12094279	0.16600071	0	363590.3	0.12094279	0.16226809	Q AF	
0.21110584		0	1082.13183	0.20359339		C CFS	
1.00000000	1.00000000	188.00000	3006300.0	1.00000000		Q AF	TOTALS
1.00000000			5315.16196	1.00000000	1.00000000	C CFS	



TABLES B-1 & B-2 (Continued)  
(in units as indicated)

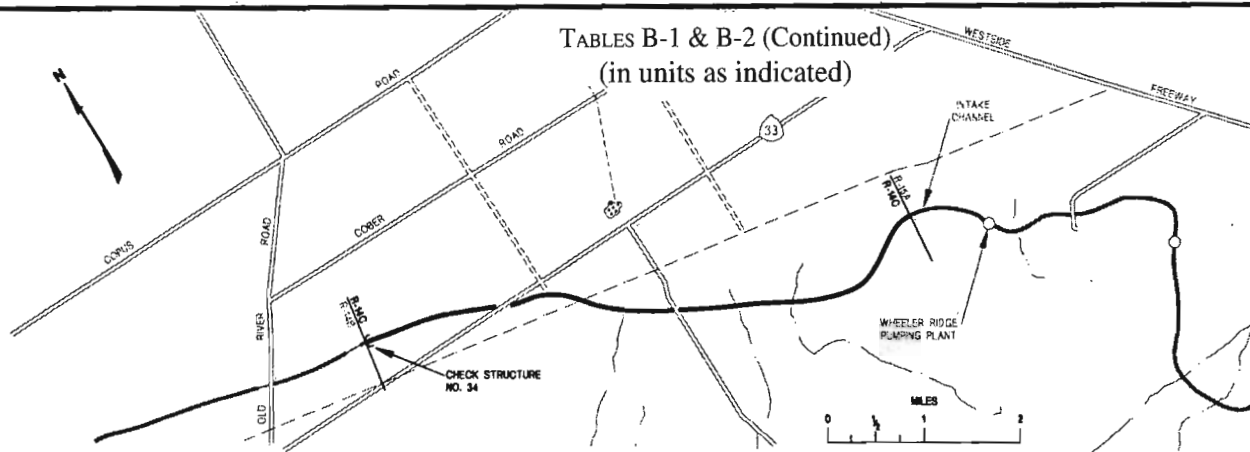
Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of			Subtotal
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>REACH 14A - BUENA VISTA PUMPING PLANT THRU SANTIAGO CREEK</b>								
The Metropolitan Water District of Southern California	Q AF	0	3892.2	2011500.0	70266.9	0	0	2081766.9
	C CFS	0	6.40529	2863.14266	106.01616	184.57517	0	3153.73399
San Bernardino Valley Municipal Water District	Q AF	0	199.9	102600.0	4309.3	0	0	106909.3
	C CFS	0	0.32902	172.33413	6.89316	0.73809	0	179.96538
San Gabriel Valley Municipal Water District	Q AF	0	56.1	28800.0	1209.7	0	0	30009.7
	C CFS	0	0.09234	45.15128	1.93504	1.25670	0	48.34302
San Geronio Pass Water Agency	Q AF	0	33.7	17300.0	726.8	0	0	18026.8
	C CFS	0	0.05547	29.05110	1.16260	0.12679	0	30.34049
Crestline-Lake Arrowhead Water Agency	Q AF	0	11.3	5800.0	243.6	0	0	6043.6
	C CFS	0	0.01860	9.75185	0.38967	0.03857	0	10.18009
Mojave Water Agency	Q AF	0	98.2	50800.0	1747.3	0	0	52547.3
	C CFS	0	0.16163	70.16895	2.87594	5.26267	0	78.30756
Desert Water Agency	Q AF	0	73.7	38100.0	1310.4	0	0	39410.4
	C CFS	0	0.12131	63.98091	2.15683	0.24980	0	66.38754
Coachella Valley County Water District	Q AF	0	44.7	23100.0	794.5	0	0	23894.5
	C CFS	0	0.07357	38.80294	1.30769	0.14777	0	40.25840
Antelope Valley-East Kern Water Agency	Q AF	0	262.5	138400.0	1977.3	0	0	140377.3
	C CFS	0	0.43206	191.16896	3.25450	14.33767	0	208.76113
Little Rock Creek Irrigation District	Q AF	0	4.4	2300.0	48.2	0	0	2348.2
	C CFS	0	0.00724	3.17694	0.07933	0.23827	0	3.49454
Palmdale Water District	Q AF	0	33.0	17300.0	327.0	0	0	17627.0
	C CFS	0	0.05432	23.89612	0.53822	1.79221	0	26.22655
Ventura County Flood Control District	Q AF	0	38.3	20000.0	504.3	0	0	20504.3
	C CFS	0	0.06304	27.62557	0.74834	2.10390	0	30.47781
Castaic Lake Water Agency	Q AF	0	103.9	54200.0	1366.5	0	0	55566.5
	C CFS	0	0.17101	74.86530	2.02778	5.70156	0	82.59464
Kern County Water Agency (Municipal and Industrial)	Q AF	0	32.0	17000.0	115.7	0	0	17115.7
	C CFS	0	0.05267	30.99589	0.19043	0	0	31.18632
Kern County Water Agency (Agriculture)	Q AF	37500.0	516.1	274800.0	1252.5	0	0	276052.5
	C CFS	111.88357	0.84947	819.88277	2.06153	0	0	821.94430
<b>TOTALS</b>	Q AF	37500.0	5400.0	2802000.0	86200.0	0	0	2888200.0
	C CFS	111.88357	8.88803	4463.99537	131.63723	216.56917	0	4812.20177
<b>REACH 14B - SANTIAGO CREEK THRU OLD RIVER ROAD</b>								
The Metropolitan Water District of Southern California	Q AF	0	2775.1	2011500.0	66374.7	0	0	2077874.7
	C CFS	0	4.56762	2863.14266	99.60986	184.57517	0	3147.32769
San Bernardino Valley Municipal Water District	Q AF	0	142.5	102600.0	4109.4	0	0	106709.4
	C CFS	0	0.23455	172.33413	6.56414	0.73809	0	179.63636
San Gabriel Valley Municipal Water District	Q AF	0	40.0	28800.0	1153.6	0	0	29953.6
	C CFS	0	0.06584	45.15128	1.84270	1.25670	0	48.25068
San Geronio Pass Water Agency	Q AF	0	24.0	17300.0	693.1	0	0	17993.1
	C CFS	0	0.03950	29.05110	1.10713	0.12679	0	30.28502
Crestline-Lake Arrowhead Water Agency	Q AF	0	8.1	5800.0	232.3	0	0	6032.3
	C CFS	0	0.01333	9.75185	0.37107	0.03857	0	10.16149
Mojave Water Agency	Q AF	0	70.1	50800.0	1649.1	0	0	52449.1
	C CFS	0	0.11538	70.16895	2.71431	5.26267	0	78.14593
Desert Water Agency	Q AF	0	52.5	38100.0	1236.7	0	0	39336.7
	C CFS	0	0.08641	63.98091	2.03552	0.24980	0	66.26623
Coachella Valley County Water District	Q AF	0	31.9	23100.0	749.8	0	0	23849.8
	C CFS	0	0.05251	38.80294	1.23412	0.14777	0	40.18483
Antelope Valley-East Kern Water Agency	Q AF	0	187.1	138400.0	1714.8	0	0	140114.8
	C CFS	0	0.30795	191.16896	2.82244	14.33767	0	208.32907
Little Rock Creek Irrigation District	Q AF	0	3.1	2300.0	43.8	0	0	2343.8
	C CFS	0	0.00510	3.17694	0.07209	0.23827	0	3.48730
Palmdale Water District	Q AF	0	23.5	17300.0	294.0	0	0	17594.0
	C CFS	0	0.03968	23.89612	0.48390	1.79221	0	26.17223
Ventura County Flood Control District	Q AF	0	27.3	20000.0	466.0	0	0	20466.0
	C CFS	0	0.04493	27.62557	0.68531	2.10390	0	30.41478
Castaic Lake Water Agency	Q AF	0	74.1	54200.0	1262.6	0	0	55462.6
	C CFS	0	0.12196	74.86530	1.85677	5.70156	0	82.42363
Kern County Water Agency (Municipal and Industrial)	Q AF	0	22.8	17000.0	83.7	0	0	17083.7
	C CFS	0	0.03753	30.99589	0.13776	0	0	31.13365
Kern County Water Agency (Agriculture)	Q AF	60700.0	317.9	237300.0	736.4	0	0	238036.4
	C CFS	181.10220	0.52324	707.99920	1.21206	0	0	709.21126
<b>TOTALS</b>	Q AF	60700.0	3800.0	2764500.0	80800.0	0	0	2845300.0
	C CFS	181.10220	6.25454	4352.11180	122.74920	216.56917	0	4691.43017



Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
BUENA VISTA PUMPING PLANT THRU SANTIAGO CREEK - REACH 14A							
0.72078350			2081766.9	0.72078350		Q AF	The Metropolitan Water District of Southern California
0.65536196	0.68807273	188.00000	3341.73399	0.66831983	0.69455166	C CFS	
0.03701589			106909.3	0.03701589		Q AF	San Bernardino Valley Municipal Water District
0.03739772	0.03720681	0	179.96538	0.03599162	0.03650376	C CFS	
0.01039045			30009.7	0.01039045		Q AF	San Gabriel Valley Municipal Water District
0.01004592	0.01021819	0	48.34302	0.00966821	0.01002933	C CFS	
0.00624153			18026.8	0.00624153		Q AF	San Geronio Pass Water Agency
0.00630491	0.00627322	0	30.34049	0.00606785	0.00615469	C CFS	
0.00209251			6043.6	0.00209251		Q AF	Crestline-Lake Arrowhead Water Agency
0.00211548	0.00210399	0	10.18009	0.00203594	0.00206423	C CFS	
0.01819379			52547.3	0.01819379		Q AF	Mojave Water Agency
0.01627271	0.01723325	0	78.30756	0.01566088	0.01692733	C CFS	
0.01364532			39410.4	0.01364532		Q AF	Desert Water Agency
0.01379567	0.01372049	0	66.38754	0.01327697	0.01346114	C CFS	
0.00827315			23894.5	0.00827315		Q AF	Coachella Valley County Water District
0.00836590	0.00831952	0	40.25840	0.00805136	0.00816225	C CFS	
0.04860373			140377.3	0.04860373		Q AF	Antelope Valley-East Kern Water Agency
0.04338162	0.04599268	0	208.76113	0.04175054	0.04517714	C CFS	
0.00081303			2348.2	0.00081303		Q AF	Littlerock Creek Irrigation District
0.00072618	0.00076961	0	3.49454	0.00069888	0.00075596	C CFS	
0.00610311			17627.0	0.00610311		Q AF	Palmdale Water District
0.00545001	0.00577656	0	26.22655	0.00524510	0.00567410	C CFS	
0.00709933			20504.3	0.00709933		Q AF	Ventura County Flood Control District
0.00633344	0.00671639	0	30.47781	0.00609532	0.00659733	C CFS	
0.01923915			55566.5	0.01923915		Q AF	Castaic Lake Water Agency
0.01716359	0.01820137	0	82.59464	0.01651826	0.01787870	C CFS	
0.00592608			17115.7	0.00592608		Q AF	Kern County Water Agency (Municipal and Industrial)
0.00648068	0.00620338	0	31.18632	0.00623701	0.00608155	C CFS	
0.09557943			276052.5	0.09557943		Q AF	Kern County Water Agency (Agriculture)
0.17080421	0.13319181	0	821.94430	0.16438223	0.12998083	C CFS	
1.00000000			2888200.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	188.00000	5000.20177	1.00000000	1.00000000	C CFS	
SANTIAGO CREEK THRU OLD RIVER ROAD - REACH 14B							
0.73028317			2077874.7	0.73028317		Q AF	The Metropolitan Water District of Southern California
0.67066743	0.70057530	188.00000	3335.32769	0.68354861	0.70691589	C CFS	
0.03750374			106709.4	0.03750374		Q AF	San Bernardino Valley Municipal Water District
0.03829032	0.03789703	0	179.63636	0.03681503	0.03715939	C CFS	
0.01052740			29953.6	0.01052740		Q AF	San Gabriel Valley Municipal Water District
0.01028486	0.01040613	0	48.25068	0.00988859	0.01020799	C CFS	
0.00632380			17993.1	0.00632380		Q AF	San Geronio Pass Water Agency
0.00645539	0.00638960	0	30.28502	0.00620667	0.00626523	C CFS	
0.00212009			6032.3	0.00212009		Q AF	Crestline-Lake Arrowhead Water Agency
0.00216597	0.00214303	0	10.16149	0.00208252	0.00210130	C CFS	
0.01843359			52449.1	0.01843359		Q AF	Mojave Water Agency
0.01665717	0.01754538	0	78.14593	0.01601538	0.01722449	C CFS	
0.01382515			39336.7	0.01382515		Q AF	Desert Water Agency
0.01412495	0.01397505	0	66.26623	0.01358073	0.01370294	C CFS	
0.00838217			23849.8	0.00838217		Q AF	Coachella Valley County Water District
0.00856558	0.00847388	0	40.18483	0.00823556	0.00830887	C CFS	
0.04924430			140114.8	0.04924430		Q AF	Antelope Valley-East Kern Water Agency
0.04440630	0.04682530	0	208.32907	0.04269537	0.04596983	C CFS	
0.00082374			2343.8	0.00082374		Q AF	Littlerock Creek Irrigation District
0.00074333	0.00078354	0	3.48730	0.00071469	0.00076922	C CFS	
0.00618353			17594.0	0.00618353		Q AF	Palmdale Water District
0.00557873	0.00588113	0	26.17223	0.00536379	0.00577366	C CFS	
0.00719292			20466.0	0.00719292		Q AF	Ventura County Flood Control District
0.00648305	0.00683798	0	30.41478	0.00623326	0.00671309	C CFS	
0.01949271			55462.6	0.01949271		Q AF	Castaic Lake Water Agency
0.01756898	0.01853084	0	82.42363	0.01689206	0.01819238	C CFS	
0.00600418			17083.7	0.00600418		Q AF	Kern County Water Agency (Municipal and Industrial)
0.00663628	0.00632023	0	31.13365	0.00639059	0.00619239	C CFS	
0.08365951			238036.4	0.08365951		Q AF	Kern County Water Agency (Agriculture)
0.15117166	0.11741558	0	709.21126	0.14534715	0.11450333	C CFS	
1.00000000			2845300.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	188.00000	4879.43017	1.00000000	1.00000000	C CFS	

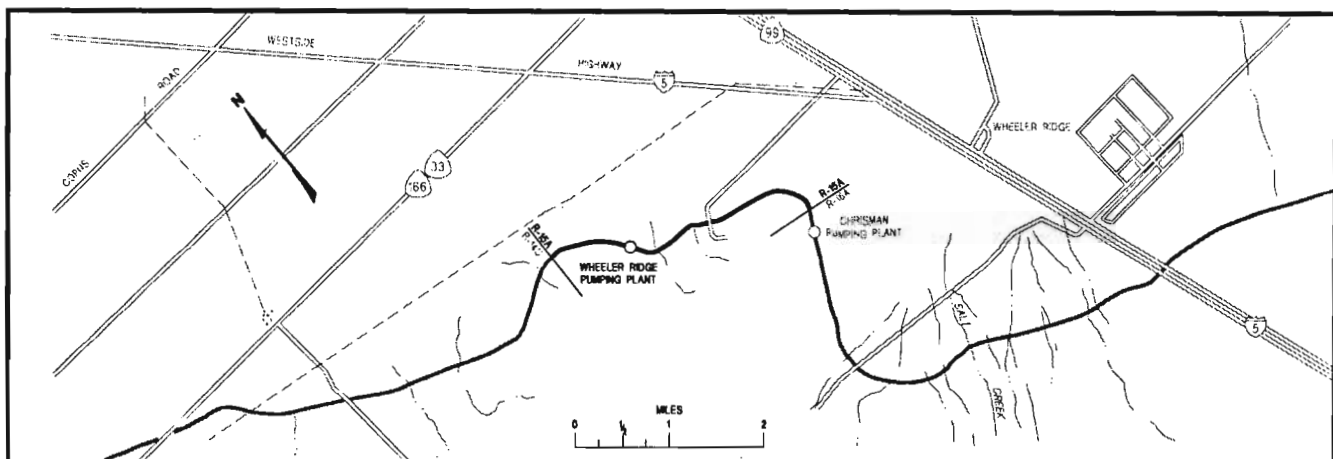


TABLES B-1 & B-2 (Continued)  
(in units as indicated)



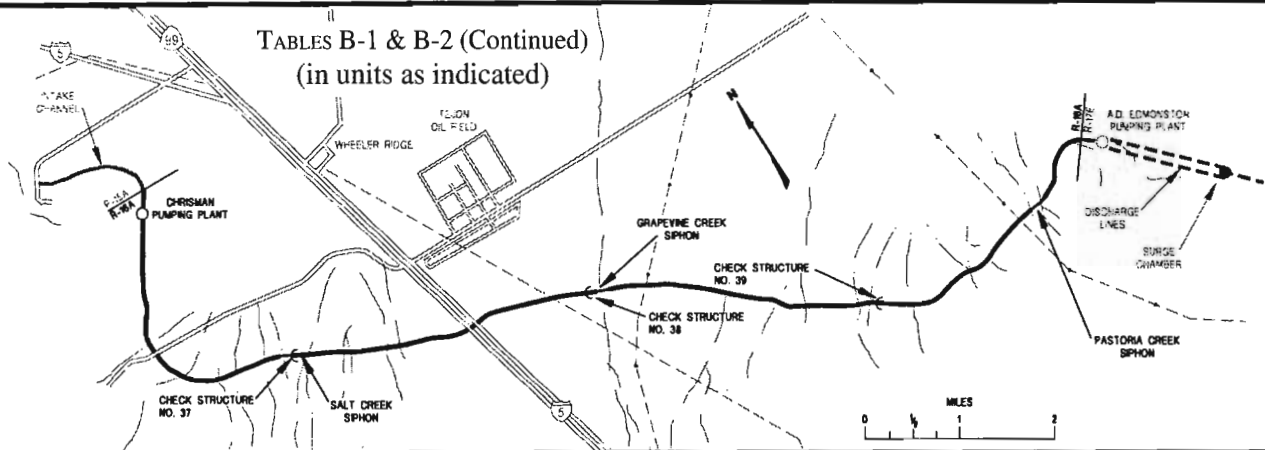
Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of			Subtotal
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 14C - OLD RIVER ROAD TO WHEELER RIDGE PUMPING PLANT								
The Metropolitan Water District of Southern California	Q AF	0	2686.4	2011500.0	63599.6	0	0	2075099.6
	C CFS	0	4.42163	2863.14266	95.04224	184.57517	0	3142.76007
San Bernardino Valley Municipal Water District	Q AF	0	138.0	102600.0	3966.9	0	0	106566.9
	C CFS	0	0.22714	172.33413	6.32960	0.73809	0	179.40182
San Gabriel Valley Municipal Water District	Q AF	0	38.7	28800.0	1113.6	0	0	29913.6
	C CFS	0	0.06370	45.15128	1.77686	1.25670	0	48.18484
San Gorgonio Pass Water Agency	Q AF	0	23.3	17300.0	669.1	0	0	17969.1
	C CFS	0	0.03835	29.05110	1.06763	0.12679	0	30.24552
Crestline-Lake Arrowhead Water Agency	Q AF	0	7.8	5800.0	224.2	0	0	6024.2
	C CFS	0	0.01284	9.75185	0.35774	0.03857	0	10.14816
Mojave Water Agency	Q AF	0	67.8	50800.0	1579.0	0	0	52379.0
	C CFS	0	0.11159	70.16895	2.59893	5.26267	0	78.03055
Desert Water Agency	Q AF	0	50.9	38100.0	1184.2	0	0	39284.2
	C CFS	0	0.08378	63.98091	1.94911	0.24980	0	66.17982
Coachella Valley County Water District	Q AF	0	30.8	23100.0	717.9	0	0	23817.9
	C CFS	0	0.05069	38.80294	1.18161	0.14777	0	40.13232
Antelope Valley-East Kern Water Agency	Q AF	0	181.1	138400.0	1527.7	0	0	139927.7
	C CFS	0	0.29808	191.16896	2.51449	14.33767	0	208.02112
Little Rock Creek Irrigation District	Q AF	0	3.0	2300.0	40.7	0	0	2340.7
	C CFS	0	0.00494	3.17694	0.06699	0.23827	0	3.48220
Palmdale Water District	Q AF	0	22.7	17300.0	270.5	0	0	17570.5
	C CFS	0	0.03736	23.89612	0.44522	1.79221	0	26.13355
Ventura County Flood Control District	Q AF	0	26.5	20000.0	438.7	0	0	20438.7
	C CFS	0	0.04362	27.62557	0.64037	2.10390	0	30.36984
Castaic Lake Water Agency	Q AF	0	71.7	54200.0	1188.5	0	0	55388.5
	C CFS	0	0.11801	74.86530	1.73481	5.70156	0	82.30167
Kern County Water Agency (Municipal and Industrial)	Q AF	0	22.1	17000.0	60.9	0	0	17060.9
	C CFS	0	0.03638	30.99589	0.10024	0	0	31.09613
Kern County Water Agency (Agriculture)	Q AF	32500.0	229.2	176600.0	418.5	0	0	177018.5
	C CFS	96.96576	0.37725	526.89700	0.68882	0	0	527.58582
TOTALS	Q AF	32500.0	3600.0	2703800.0	77000.0	0	0	2780800.0
	C CFS	96.96576	5.92535	4171.00960	116.49466	216.56917	0	4504.07343
REACH 15A - WHEELER RIDGE PUMPING PLANT TO CHRISMAN PUMPING PLANT								
The Metropolitan Water District of Southern California	Q AF	0	604.1	2011500.0	60913.2	0	0	2072413.2
	C CFS	0	0.99431	2863.14266	90.62061	184.57517	0	3138.33844
San Bernardino Valley Municipal Water District	Q AF	0	31.0	102600.0	3828.9	0	0	106428.9
	C CFS	0	0.05102	172.33413	6.10246	0.73809	0	179.17468
San Gabriel Valley Municipal Water District	Q AF	0	8.7	28800.0	1074.9	0	0	29874.9
	C CFS	0	0.01432	45.15128	1.71316	1.25670	0	48.12114
San Gorgonio Pass Water Agency	Q AF	0	5.2	17300.0	645.8	0	0	17945.8
	C CFS	0	0.00856	29.05110	1.02928	0.12679	0	30.20717
Crestline-Lake Arrowhead Water Agency	Q AF	0	1.8	5800.0	216.4	0	0	6016.4
	C CFS	0	0.00296	9.75185	0.34490	0.03857	0	10.13532
Mojave Water Agency	Q AF	0	15.2	50800.0	1511.2	0	0	52311.2
	C CFS	0	0.02502	70.16895	2.48733	5.26267	0	77.91895
Desert Water Agency	Q AF	0	11.4	38100.0	1133.3	0	0	39233.3
	C CFS	0	0.01876	63.98091	1.86533	0.24980	0	66.09604
Coachella Valley County Water District	Q AF	0	6.9	23100.0	687.1	0	0	23787.1
	C CFS	0	0.01136	38.80294	1.13092	0.14777	0	40.08163
Antelope Valley-East Kern Water Agency	Q AF	0	40.7	138400.0	1346.6	0	0	139746.6
	C CFS	0	0.06699	191.16896	2.21641	14.33767	0	207.72304
Little Rock Creek Irrigation District	Q AF	0	0.7	2300.0	37.7	0	0	2337.7
	C CFS	0	0.00115	3.17694	0.06205	0.23827	0	3.47726
Palmdale Water District	Q AF	0	5.1	17300.0	247.8	0	0	17547.8
	C CFS	0	0.00839	23.89612	0.40786	1.79221	0	26.09619
Ventura County Flood Control District	Q AF	0	6.0	20000.0	412.2	0	0	20412.2
	C CFS	0	0.00988	27.62557	0.59675	2.10390	0	30.32622
Castaic Lake Water Agency	Q AF	0	16.1	54200.0	1116.8	0	0	55316.8
	C CFS	0	0.02650	74.86530	1.61679	5.70156	0	82.18365
Kern County Water Agency (Municipal and Industrial)	Q AF	0	5.0	17000.0	38.8	0	0	17038.8
	C CFS	0	0.00823	30.99589	0.06386	0	0	31.05975
Kern County Water Agency (Agriculture)	Q AF	70000.0	42.1	144100.0	189.3	0	0	144289.3
	C CFS	208.84932	0.06929	429.93124	0.31157	0	0	430.24281
TOTALS	Q AF	70000.0	800.0	2671300.0	73400.0	0	0	2744700.0
	C CFS	208.84932	1.31675	4074.04384	110.56931	216.56917	0	4401.18232



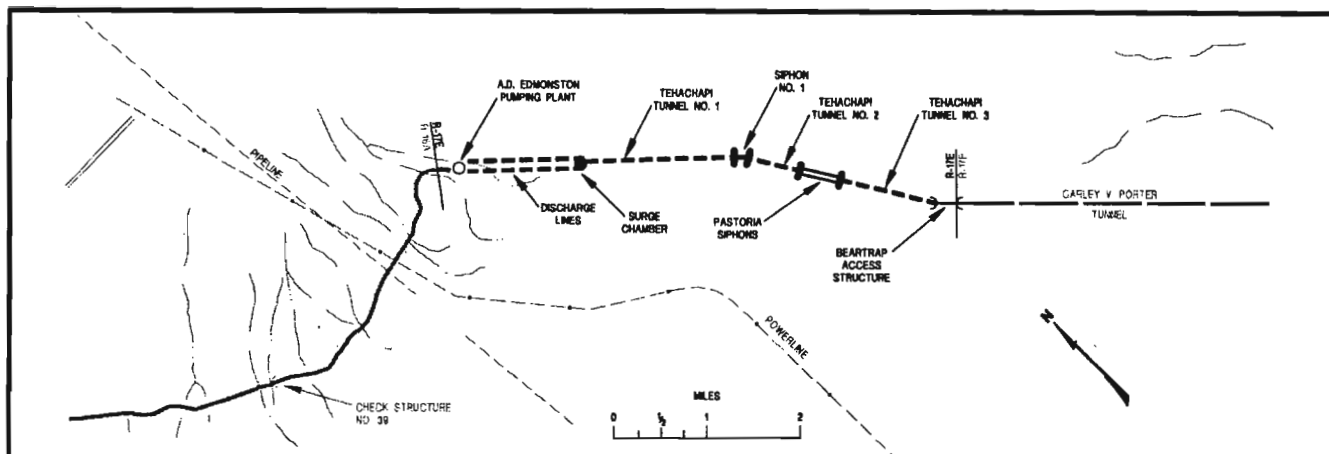


Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
OLD RIVER ROAD TO WHEELER RIDGE PUMPING PLANT - REACH 14C							
0.74622396			2075099.6	0.74622396		Q AF	The Metropolitan Water District of Southern California
0.69775951	0.72199174	188.00000	3330.76007	0.70986955	0.72804676	C CFS	San Bernardino Valley Municipal Water District
0.03832239			106566.9	0.03832239		Q AF	San Gabriel Valley Municipal Water District
0.03983101	0.03907670	0	179.40182	0.03823508	0.03827874	C CFS	San Geronio Pass Water Agency
0.01075719			29913.6	0.01075719		Q AF	Crestline-Lake Arrowhead Water Agency
0.01069806	0.01072763	0	48.18484	0.01026941	0.01051330	C CFS	Mojave Water Agency
0.00646185			17969.1	0.00646185		Q AF	Desert Water Agency
0.00671515	0.00658850	0	30.24552	0.00644609	0.00645397	C CFS	Coachella Valley County Water District
0.00216635			6024.2	0.00216635		Q AF	Antelope Valley-East Kern Water Agency
0.00225311	0.00220973	0	10.14816	0.00216283	0.00216459	C CFS	Little Rock Creek Irrigation District
0.01883595			52379.0	0.01883595		Q AF	Palmdale Water District
0.01732444	0.01808019	0	78.03055	0.01663029	0.01773312	C CFS	Ventura County Flood Control District
0.01412694			39284.2	0.01412694		Q AF	Castaic Lake Water Agency
0.01469333	0.01441013	0	66.17982	0.01410460	0.01411577	C CFS	
0.00856512			23817.9	0.00856512		Q AF	
0.00891023	0.00873768	0	40.13232	0.00855322	0.00855917	C CFS	
0.05031922			139927.7	0.05031922		Q AF	
0.04618511	0.04825217	0	208.02112	0.04433458	0.04732690	C CFS	
0.00084174			2340.7	0.00084174		Q AF	
0.00077312	0.00080743	0	3.48220	0.00074215	0.00079194	C CFS	
0.00631851			17570.5	0.00631851		Q AF	
0.00580220	0.00606036	0	26.13355	0.00556972	0.00594412	C CFS	
0.00734994			20438.7	0.00734994		Q AF	
0.00674275	0.00704634	0	30.36984	0.00647258	0.00691126	C CFS	
0.01991819			55388.5	0.01991819		Q AF	
0.01827272	0.01909545	0	82.30167	0.01754058	0.01872938	C CFS	
0.00613525			17060.9	0.00613525		Q AF	
0.00690400	0.00651962	0	31.09613	0.00662738	0.00638131	C CFS	
0.06365740			177018.5	0.06365740		Q AF	
0.11713526	0.09039633	0	527.58582	0.11244194	0.08804967	C CFS	
1.00000000			2780800.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	188.00000	4692.07343	1.00000000	1.00000000	C CFS	
WHEELER RIDGE PUMPING PLANT TO CHRISMAN PUMPING PLANT - REACH 15A							
0.75506001			2072413.2	0.75506001		Q AF	The Metropolitan Water District of Southern California
0.71306713	0.73406357	188.00000	3326.33844	0.72482159	0.73994080	C CFS	San Bernardino Valley Municipal Water District
0.03877615			106428.9	0.03877615		Q AF	San Gabriel Valley Municipal Water District
0.04071058	0.03974336	0	179.17468	0.03904283	0.03890949	C CFS	San Geronio Pass Water Agency
0.01088458			29874.9	0.01088458		Q AF	Crestline-Lake Arrowhead Water Agency
0.01093369	0.01090913	0	48.12114	0.01048578	0.01068518	C CFS	Mojave Water Agency
0.00653835			17945.8	0.00653835		Q AF	Desert Water Agency
0.00686342	0.00670088	0	30.20717	0.00658225	0.00656030	C CFS	Coachella Valley County Water District
0.00219201			6016.4	0.00219201		Q AF	Antelope Valley-East Kern Water Agency
0.00230286	0.00224744	0	10.13532	0.00220852	0.00220027	C CFS	Little Rock Creek Irrigation District
0.01905899			52311.2	0.01905899		Q AF	Palmdale Water District
0.01770410	0.01838154	0	77.91895	0.01697883	0.01801891	C CFS	Ventura County Flood Control District
0.01429420			39233.3	0.01429420		Q AF	Castaic Lake Water Agency
0.01501779	0.01465600	0	66.09604	0.01440257	0.01434839	C CFS	
0.00866656			23787.1	0.00866656		Q AF	
0.00910701	0.00886679	0	40.08163	0.00873394	0.00870025	C CFS	
0.05091507			139746.6	0.05091507		Q AF	
0.04719710	0.04905609	0	207.72304	0.04526363	0.04808935	C CFS	
0.00085171			2337.7	0.00085171		Q AF	
0.00079007	0.00082089	0	3.47726	0.00075771	0.00080471	C CFS	
0.00639334			17547.8	0.00639334		Q AF	
0.00592936	0.00616135	0	26.09619	0.00568646	0.00603990	C CFS	
0.00743695			20412.2	0.00743695		Q AF	
0.00689047	0.00716371	0	30.32622	0.00660820	0.00702257	C CFS	
0.02015404			55316.8	0.02015404		Q AF	
0.01867309	0.01941356	0	82.18365	0.01790813	0.01903108	C CFS	
0.00620789			17038.8	0.00620789		Q AF	
0.00705714	0.00663252	0	31.05975	0.00676804	0.00648796	C CFS	
0.05257015			144289.3	0.05257015		Q AF	
0.09775619	0.07516317	0	430.24281	0.09375152	0.07316084	C CFS	
1.00000000			2744700.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	188.00000	4589.18232	1.00000000	1.00000000	C CFS	

TABLES B-1 & B-2 (Continued)  
(in units as indicated)

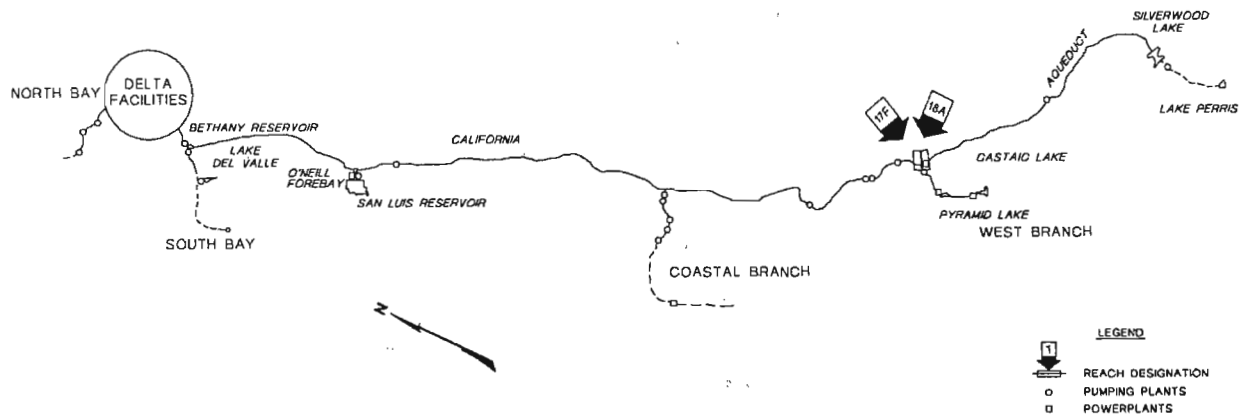


Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of			Subtotal
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>REACH 16A - CHRISMAN PUMPING PLANT TO A. D. EDMONSTON PUMPING PLANT</b>								
The Metropolitan Water District of Southern California	Q AF	0	4106.6	2011500.0	60309.1	0	0	2071809.1
	C CFS	0	6.75918	2863.14266	89.62630	184.57517	0	3137.34413
San Bernardino Valley Municipal Water District	Q AF	0	210.9	102600.0	3797.9	0	0	106397.9
	C CFS	0	0.34713	172.33413	6.05143	0.73809	0	179.12365
San Gabriel Valley Municipal Water District	Q AF	0	59.2	28800.0	1066.2	0	0	29866.2
	C CFS	0	0.09744	45.15128	1.69884	1.25670	0	48.10682
San Geronio Pass Water Agency	Q AF	0	35.6	17300.0	640.6	0	0	17940.6
	C CFS	0	0.05860	29.05110	1.02072	0.12679	0	30.19861
Crestline-Lake Arrowhead Water Agency	Q AF	0	11.9	5800.0	214.6	0	0	6014.6
	C CFS	0	0.01959	9.75185	0.34194	0.03857	0	10.13236
Mojave Water Agency	Q AF	0	103.7	50800.0	1496.0	0	0	52296.0
	C CFS	0	0.17068	70.16895	2.46231	5.26267	0	77.89393
Desert Water Agency	Q AF	0	77.7	38100.0	1121.9	0	0	39221.9
	C CFS	0	0.12789	63.98091	1.84657	0.24980	0	66.07728
Coachella Valley County Water District	Q AF	0	47.1	23100.0	680.2	0	0	23780.2
	C CFS	0	0.07752	38.80294	1.11956	0.14777	0	40.07027
Antelope Valley-East Kern Water Agency	Q AF	0	276.9	138400.0	1305.9	0	0	139705.9
	C CFS	0	0.45576	191.16896	2.14942	14.33767	0	207.65605
Littlerock Creek Irrigation District	Q AF	0	4.6	2300.0	37.0	0	0	2337.0
	C CFS	0	0.00757	3.17694	0.06090	0.23827	0	3.47611
Palmdale Water District	Q AF	0	34.8	17300.0	242.7	0	0	17542.7
	C CFS	0	0.05728	23.89612	0.39947	1.79221	0	26.08780
Ventura County Flood Control District	Q AF	0	40.4	20000.0	406.2	0	0	20406.2
	C CFS	0	0.06650	27.62557	0.58688	2.10390	0	30.31635
Castaic Lake Water Agency	Q AF	0	109.6	54200.0	1100.7	0	0	55300.7
	C CFS	0	0.18039	74.86530	1.59030	5.70156	0	82.15716
Kern County Water Agency (Municipal and Industrial)	Q AF	12000.0	33.8	17000.0	33.8	0	0	17033.8
	C CFS	21.87945	0.05563	30.99589	0.05563	0	0	31.05152
Kern County Water Agency (Agriculture)	Q AF	74100.0	147.2	74100.0	147.2	0	0	74247.2
	C CFS	221.08192	0.24228	221.08192	0.24228	0	0	221.32420
<b>TOTALS</b>	Q AF	86100.0	5300.0	2601300.0	72600.0	0	0	2673900.0
	C CFS	242.96137	8.72344	3865.19452	109.25256	216.56917	0	4191.01625
<b>REACH 17E - A. D. EDMONSTON PUMPING PLANT TO CARLEY V. PORTER TUNNEL</b>								
The Metropolitan Water District of Southern California	Q AF	0	0	2011500.0	56202.5	0	0	2067702.5
	C CFS	0	0	2863.14266	82.86712	184.57517	0	3130.58495
San Bernardino Valley Municipal Water District	Q AF	0	0	102600.0	3587.0	0	0	106187.0
	C CFS	0	0	172.33413	5.70431	0.73809	0	178.77653
San Gabriel Valley Municipal Water District	Q AF	0	0	28800.0	1007.0	0	0	29807.0
	C CFS	0	0	45.15128	1.60140	1.25670	0	48.00938
San Geronio Pass Water Agency	Q AF	0	0	17300.0	605.0	0	0	17905.0
	C CFS	0	0	29.05110	0.96213	0.12679	0	30.14002
Crestline-Lake Arrowhead Water Agency	Q AF	0	0	5800.0	202.7	0	0	6002.7
	C CFS	0	0	9.75185	0.32235	0.03857	0	10.11277
Mojave Water Agency	Q AF	0	0	50800.0	1392.3	0	0	52192.3
	C CFS	0	0	70.16895	2.29163	5.26267	0	77.72325
Desert Water Agency	Q AF	0	0	38100.0	1044.2	0	0	39144.2
	C CFS	0	0	63.98091	1.71868	0.24980	0	65.94939
Coachella Valley County Water District	Q AF	0	0	23100.0	633.1	0	0	23733.1
	C CFS	0	0	38.80294	1.04204	0.14777	0	39.99275
Antelope Valley-East Kern Water Agency	Q AF	0	0	138400.0	1029.0	0	0	139429.0
	C CFS	0	0	191.16896	1.69366	14.33767	0	207.20029
Littlerock Creek Irrigation District	Q AF	0	0	2300.0	32.4	0	0	2332.4
	C CFS	0	0	3.17694	0.05333	0.23827	0	3.46854
Palmdale Water District	Q AF	0	0	17300.0	207.9	0	0	17507.9
	C CFS	0	0	23.89612	0.34219	1.79221	0	26.03052
Ventura County Flood Control District	Q AF	0	0	20000.0	365.8	0	0	20365.8
	C CFS	0	0	27.62557	0.52038	2.10390	0	30.24985
Castaic Lake Water Agency	Q AF	0	0	54200.0	991.1	0	0	55191.1
	C CFS	0	0	74.86530	1.40990	5.70156	0	81.97676
Kern County Water Agency (Municipal and Industrial)	Q AF	5000.0	0	5000.0	0	0	0	5000.0
	C CFS	9.11644	0	9.11644	0	0	0	9.11644
<b>TOTALS</b>	Q AF	5000.0	0	2515200.0	67300.0	0	0	2582500.0
	C CFS	9.11644	0	3622.23315	100.52912	216.56917	0	3939.33144

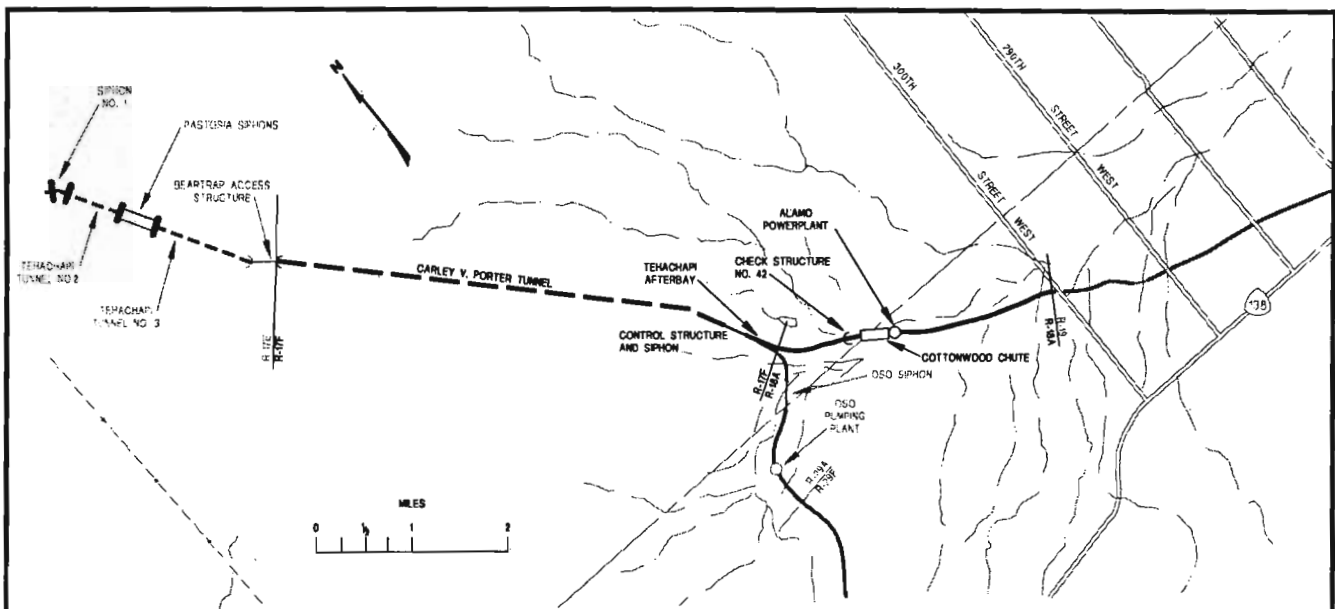


Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
CHRISMAN PUMPING PLANT TO A. D. EDMONSTON PUMPING PLANT - REACH 16A							
0.77482670			2071809.1	0.77482670		Q AF	The Metropolitan Water District of Southern California
0.74858792	0.76170731	188.00000	3325.34413	0.75938155	0.76710412	C CFS	San Bernardino Valley Municipal Water District
0.03979128			106397.9	0.03979128		Q AF	San Gabriel Valley Municipal Water District
0.04273991	0.04126559	0	179.12365	0.04090500	0.04034814	C CFS	San Geronio Pass Water Agency
0.01116953			29866.2	0.01116953		Q AF	Crestline-Lake Arrowhead Water Agency
0.01147856	0.01132404	0	48.10682	0.01098576	0.01107764	C CFS	Mojave Water Agency
0.00670953			17940.6	0.00670953		Q AF	Desert Water Agency
0.00720556	0.00695754	0	30.19861	0.00689621	0.00680287	C CFS	Coachella Valley County Water District
0.00224937			6014.6	0.00224937		Q AF	Antelope Valley-East Kern Water Agency
0.00241764	0.00233351	0	10.13236	0.00231384	0.00228161	C CFS	Little Rock Creek Irrigation District
0.01955795			52296.0	0.01955795		Q AF	Palmdale Water District
0.01858593	0.01907194	0	77.89393	0.01778800	0.01867297	C CFS	Ventura County Flood Control District
0.01466842			39221.9	0.01466842		Q AF	Castaic Lake Water Agency
0.01576641	0.01521742	0	66.07728	0.01508953	0.01487897	C CFS	Kern County Water Agency (Municipal and Industrial)
0.00889345			23780.2	0.00889345		Q AF	Kern County Water Agency (Agriculture)
0.00956099	0.00922722	0	40.07027	0.00915052	0.00902198	C CFS	
0.05224799			139705.9	0.05224799		Q AF	
0.04954790	0.05089794	0	207.65605	0.04742071	0.04983435	C CFS	
0.00087400			2337.0	0.00087400		Q AF	
0.00082942	0.00085171	0	3.47611	0.00079381	0.00083391	C CFS	
0.00656072			17542.7	0.00656072		Q AF	
0.00622469	0.00639271	0	26.08780	0.00595746	0.00625909	C CFS	
0.00763162			20406.2	0.00763162		Q AF	
0.00723365	0.00743264	0	30.31635	0.00692309	0.00727736	C CFS	
0.02068166			55300.7	0.02068166		Q AF	
0.01960316	0.02014241	0	82.15716	0.01876155	0.01972161	C CFS	
0.00637040			17033.8	0.00637040		Q AF	
0.00740907	0.00688973	0	31.05152	0.00709098	0.00673069	C CFS	
0.02776738			74247.2	0.02776738		Q AF	
0.05280919	0.04028829	0	221.32420	0.05054199	0.03915469	C CFS	
1.00000000			2673900.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	188.00000	4379.01625	1.00000000	1.00000000	C CFS	
A. D. EDMONSTON PUMPING PLANT TO CARLEY V. PORTER TUNNEL - REACH 17E							
0.80065924			2067702.5	0.80065924		Q AF	The Metropolitan Water District of Southern California
0.79469956	0.79767940	188.00000	3318.58495	0.80405099	0.80235512	C CFS	San Bernardino Valley Municipal Water District
0.04111791			106187.0	0.04111791		Q AF	San Gabriel Valley Municipal Water District
0.04538245	0.04325018	0	178.77653	0.04331528	0.04221660	C CFS	San Geronio Pass Water Agency
0.01154192			29807.0	0.01154192		Q AF	Crestline-Lake Arrowhead Water Agency
0.01218719	0.01186455	0	48.00938	0.01163206	0.01158699	C CFS	Mojave Water Agency
0.00693320			17905.0	0.00693320		Q AF	Desert Water Agency
0.00765105	0.00729213	0	30.14002	0.00730254	0.00711787	C CFS	Coachella Valley County Water District
0.00232438			6002.7	0.00232438		Q AF	Antelope Valley-East Kern Water Agency
0.00256713	0.00244575	0	10.11277	0.00245020	0.00238729	C CFS	Little Rock Creek Irrigation District
0.02020999			52192.3	0.02020999		Q AF	Palmdale Water District
0.01973006	0.01997003	0	77.72325	0.01883136	0.01952067	C CFS	Ventura County Flood Control District
0.01515748			39144.2	0.01515748		Q AF	Castaic Lake Water Agency
0.01674126	0.01594937	0	65.94939	0.01597870	0.01556809	C CFS	Kern County Water Agency (Municipal and Industrial)
0.00918997			23733.1	0.00918997		Q AF	
0.01015217	0.00967107	0	39.99275	0.00968974	0.00943985	C CFS	
0.05398993			139429.0	0.05398993		Q AF	
0.05259783	0.05329388	0	207.20029	0.05020200	0.05209597	C CFS	
0.00090316			2332.4	0.00090316		Q AF	
0.00088049	0.00089182	0	3.46854	0.00084038	0.00087177	C CFS	
0.00677944			17507.9	0.00677944		Q AF	
0.00660785	0.00669365	0	26.03052	0.00630686	0.00654315	C CFS	
0.00788608			20365.8	0.00788608		Q AF	
0.00767893	0.00778251	0	30.24985	0.00732916	0.00760762	C CFS	
0.02137119			55191.1	0.02137119		Q AF	
0.02080982	0.02109050	0	81.97676	0.01986193	0.02061656	C CFS	
0.00193611			5000.0	0.00193611		Q AF	
0.00231421	0.00212516	0	9.11644	0.00220880	0.00207245	C CFS	
1.00000000			2582500.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	188.00000	4127.33144	1.00000000	1.00000000	C CFS	

TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)

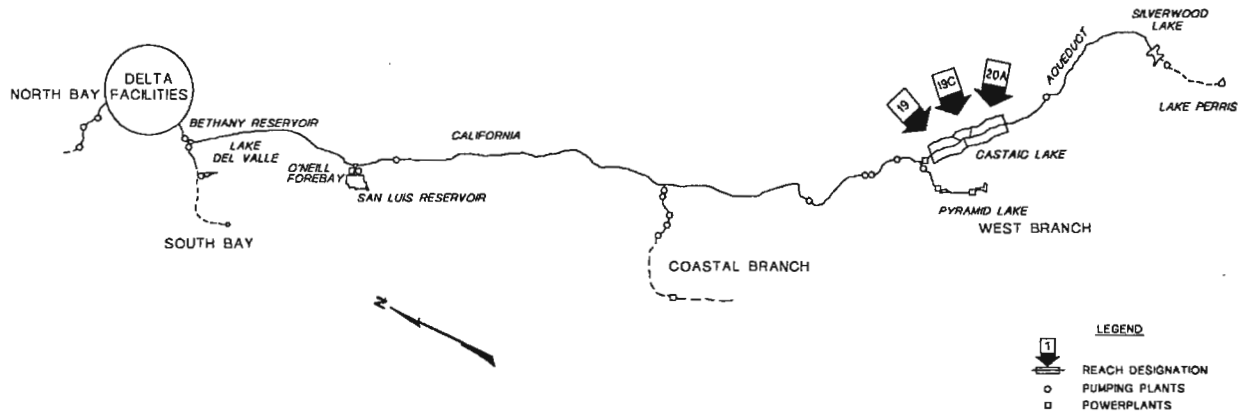


Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of			Subtotal
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 17F - CARLEY V. PORTER TUNNEL TO JUNCTION, WEST BRANCH, CALIFORNIA AQUEDUCT								
The Metropolitan Water District of Southern California	Q AF	0	80.2	2011500.0	56202.5	0	0	2067702.5
	C CFS	0	0.13200	2863.14266	82.86712	184.57517	0	3130.58495
San Bernardino Valley Municipal Water District	Q AF	0	4.1	102600.0	3587.0	0	0	106187.0
	C CFS	0	0.00675	172.33413	5.70431	0.73809	0	178.77653
San Gabriel Valley Municipal Water District	Q AF	0	1.2	28800.0	1007.0	0	0	29807.0
	C CFS	0	0.00198	45.15128	1.60140	1.25670	0	48.00938
San Geronimo Pass Water Agency	Q AF	0	0.7	17300.0	605.0	0	0	17905.0
	C CFS	0	0.00115	29.05110	0.96213	0.12679	0	30.14002
Crestline-Lake Arrowhead Water Agency	Q AF	0	0.2	5800.0	202.7	0	0	6002.7
	C CFS	0	0.00033	9.75185	0.32235	0.03857	0	10.11277
Mojave Water Agency	Q AF	0	2.0	50800.0	1392.3	0	0	52192.3
	C CFS	0	0.00329	70.16895	2.29163	5.26267	0	77.72325
Desert Water Agency	Q AF	0	1.5	38100.0	1044.2	0	0	39144.2
	C CFS	0	0.00247	63.98091	1.71868	0.24980	0	65.94939
Coachella Valley County Water District	Q AF	0	0.9	23100.0	633.1	0	0	23733.1
	C CFS	0	0.00148	38.80294	1.04204	0.14777	0	39.99275
Antelope Valley-East Kern Water Agency	Q AF	0	5.4	138400.0	1029.0	0	0	139429.0
	C CFS	0	0.00889	191.16896	1.69366	14.33767	0	207.20029
Littlerock Creek Irrigation District	Q AF	0	0.1	2300.0	32.4	0	0	2332.4
	C CFS	0	0.00016	3.17694	0.05333	0.23827	0	3.46854
Palmdale Water District	Q AF	0	0.7	17300.0	207.9	0	0	17507.9
	C CFS	0	0.00115	23.89612	0.34219	1.79221	0	26.03052
Ventura County Flood Control District	Q AF	0	0.8	20000.0	365.8	0	0	20365.8
	C CFS	0	0.00132	27.62557	0.52038	2.10390	0	30.24985
Castaic Lake Water Agency	Q AF	0	2.2	54200.0	991.1	0	0	55191.1
	C CFS	0	0.00362	74.86530	1.40990	5.70156	0	81.97676
TOTALS	Q AF	0	100.0	2510200.0	67300.0	0	0	2577500.0
	C CFS	0	0.16459	3613.11671	100.52912	216.56917	0	3930.21500
REACH 18A - JUNCTION, WEST BRANCH, CALIFORNIA AQUEDUCT THRU ALAMO POWERPLANT								
The Metropolitan Water District of Southern California	Q AF	0	459.5	556500.0	29576.2	0	0	586076.2
	C CFS	0	0.75631	853.38233	44.98478	31.51693	0	929.88404
San Bernardino Valley Municipal Water District	Q AF	0	83.3	102600.0	3582.9	0	0	106182.9
	C CFS	0	0.13711	172.33413	5.69756	0.73809	0	178.76978
San Gabriel Valley Municipal Water District	Q AF	0	23.4	28800.0	1005.8	0	0	29805.8
	C CFS	0	0.03851	45.15128	1.59943	1.25670	0	48.00741
San Geronimo Pass Water Agency	Q AF	0	14.1	17300.0	604.3	0	0	17904.3
	C CFS	0	0.02321	29.05110	0.96097	0.12679	0	30.13886
Crestline-Lake Arrowhead Water Agency	Q AF	0	4.7	5800.0	202.5	0	0	6002.5
	C CFS	0	0.00774	9.75185	0.32202	0.03857	0	10.11244
Mojave Water Agency	Q AF	0	40.9	50800.0	1390.3	0	0	52190.3
	C CFS	0	0.06732	70.16895	2.28834	5.26267	0	77.71996
Desert Water Agency	Q AF	0	30.7	38100.0	1042.7	0	0	39142.7
	C CFS	0	0.05053	63.98091	1.71621	0.24980	0	65.94692
Coachella Valley County Water District	Q AF	0	18.6	23100.0	632.2	0	0	23732.2
	C CFS	0	0.03061	38.80294	1.04056	0.14777	0	39.99127
Antelope Valley-East Kern Water Agency	Q AF	0	109.3	138400.0	1023.6	0	0	139423.6
	C CFS	0	0.17990	191.16896	1.68478	14.33767	0	207.19141
Littlerock Creek Irrigation District	Q AF	0	1.8	2300.0	32.3	0	0	2332.3
	C CFS	0	0.00296	3.17694	0.05316	0.23827	0	3.46837
Palmdale Water District	Q AF	0	13.7	17300.0	207.2	0	0	17507.2
	C CFS	0	0.02255	23.89612	0.34104	1.79221	0	26.02937
TOTALS	Q AF	0	800.0	981000.0	39300.0	0	0	1020300.0
	C CFS	0	1.31675	1500.86551	60.68885	55.70547	0	1617.25983

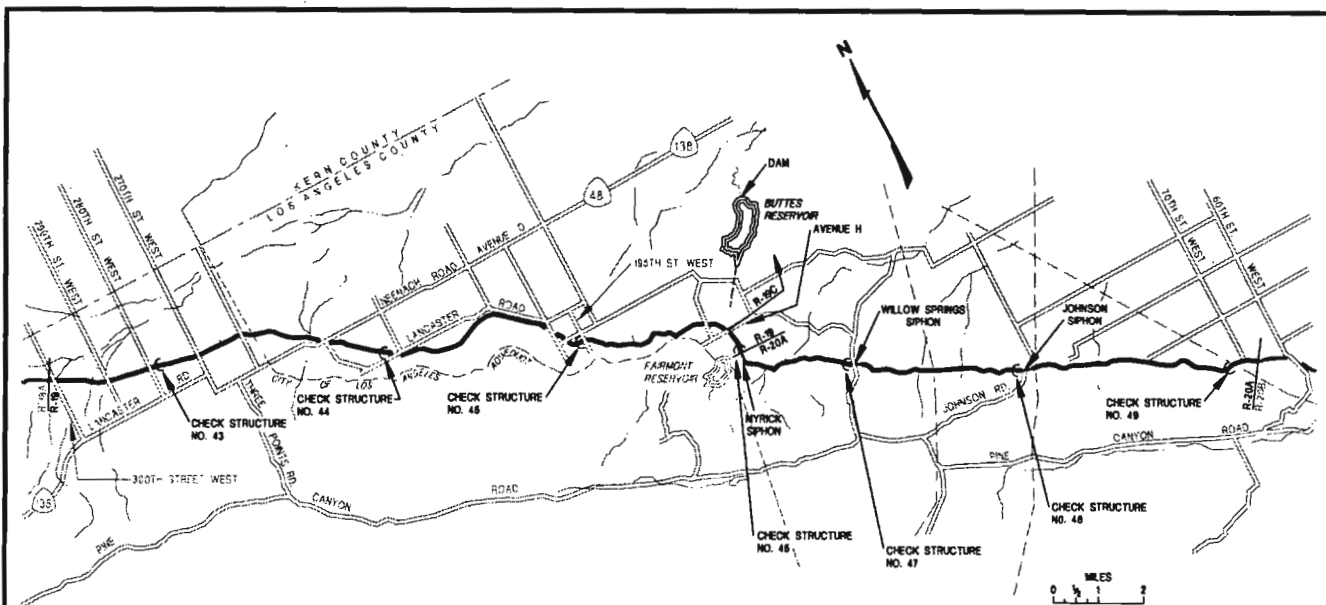


Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
CARLEY V. PORTER TUNNEL TO JUNCTION, WEST BRANCH, CALIFORNIA AQUEDUCT - REACH 17F							
0.80221241			2067702.5	0.80221241		Q AF	The Metropolitan Water District of Southern California
0.79654292	0.79937767	188.00000	3318.58495	0.80583091	0.80402166	C CFS	
0.04119767			106187.0	0.04119767		Q AF	San Bernardino Valley Municipal Water District
0.04548772	0.04334270	0	178.77653	0.04341117	0.04230442	C CFS	
0.01156431			29807.0	0.01156431		Q AF	San Gabriel Valley Municipal Water District
0.01221546	0.01188988	0	48.00938	0.01165781	0.01161106	C CFS	
0.00694665			17905.0	0.00694665		Q AF	San Geronio Pass Water Agency
0.00766880	0.00730773	0	30.14002	0.00731871	0.00713268	C CFS	
0.00232888			6002.7	0.00232888		Q AF	Crestline-Lake Arrowhead Water Agency
0.00257308	0.00245098	0	10.11277	0.00245562	0.00239225	C CFS	
0.02024919			52192.3	0.02024919		Q AF	Mojave Water Agency
0.01977583	0.02001251	0	77.72325	0.01887304	0.01956112	C CFS	
0.01518689			39144.2	0.01518689		Q AF	Desert Water Agency
0.01678010	0.01598349	0	65.94939	0.01601407	0.01560048	C CFS	
0.00920780			23733.1	0.00920780		Q AF	Coachella Valley County Water District
0.01017571	0.00969176	0	39.99275	0.00971119	0.00945949	C CFS	
0.05409467			139429.0	0.05409467		Q AF	Antelope Valley-East Kern Water Agency
0.05271984	0.05340725	0	207.20029	0.05031313	0.05220390	C CFS	
0.00090491			2332.4	0.00090491		Q AF	Littlerock Creek Irrigation District
0.00088253	0.00089372	0	3.46854	0.00084224	0.00087358	C CFS	
0.00679259			17507.9	0.00679259		Q AF	Palmdale Water District
0.00662318	0.00670788	0	26.03052	0.00632083	0.00655671	C CFS	
0.00790138			20365.8	0.00790138		Q AF	Ventura County Flood Control District
0.00769674	0.00779906	0	30.24985	0.00734538	0.00762338	C CFS	
0.02141265			55191.1	0.02141265		Q AF	Castaic Lake Water Agency
0.02085809	0.02113537	0	81.97676	0.01990590	0.02065927	C CFS	
1.00000000			2577500.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	188.00000	4118.21500	1.00000000	1.00000000	C CFS	
JUNCTION, WEST BRANCH, CALIFORNIA AQUEDUCT THRU ALAMO POWERPLANT - REACH 18A							
0.57441556			586076.2	0.57441556		Q AF	The Metropolitan Water District of Southern California
0.57497504	0.57469530	0	929.88404	0.57497504	0.57469530	C CFS	
0.10407027			106182.9	0.10407027		Q AF	San Bernardino Valley Municipal Water District
0.11053869	0.10730448	0	178.76978	0.11053869	0.10730448	C CFS	
0.02921278			29805.8	0.02921278		Q AF	San Gabriel Valley Municipal Water District
0.02968441	0.02944860	0	48.00741	0.02968441	0.02944860	C CFS	
0.01754808			17904.3	0.01754808		Q AF	San Geronio Pass Water Agency
0.01863576	0.01809192	0	30.13886	0.01863576	0.01809192	C CFS	
0.00588307			6002.5	0.00588307		Q AF	Crestline-Lake Arrowhead Water Agency
0.00625283	0.00606795	0	10.11244	0.00625283	0.00606795	C CFS	
0.05115192			52190.3	0.05115192		Q AF	Mojave Water Agency
0.04805657	0.04960424	0	77.71996	0.04805657	0.04960424	C CFS	
0.03836391			39142.7	0.03836391		Q AF	Desert Water Agency
0.04077695	0.03957043	0	65.94692	0.04077695	0.03957043	C CFS	
0.02326002			23732.2	0.02326002		Q AF	Coachella Valley County Water District
0.02472779	0.02399391	0	39.99127	0.02472779	0.02399391	C CFS	
0.13664961			139423.6	0.13664961		Q AF	Antelope Valley-East Kern Water Agency
0.12811263	0.13238112	0	207.19141	0.12811263	0.13238112	C CFS	
0.00228590			2332.3	0.00228590		Q AF	Littlerock Creek Irrigation District
0.00214460	0.00221525	0	3.46837	0.00214460	0.00221525	C CFS	
0.01715888			17507.2	0.01715888		Q AF	Palmdale Water District
0.01609473	0.01662680	0	26.02937	0.01609473	0.01662680	C CFS	
1.00000000			1020300.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	1617.25983	1.00000000	1.00000000	C CFS	

TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)

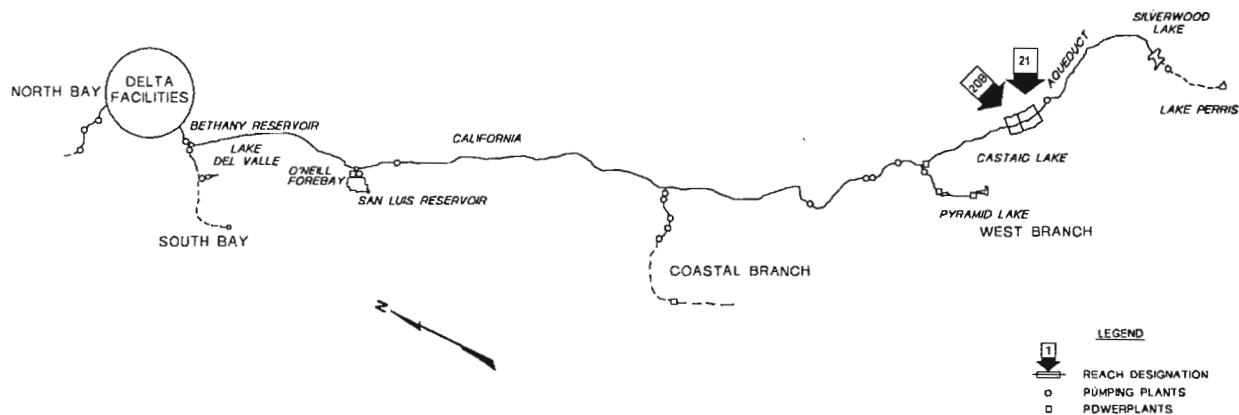


Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of			
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 19 - ALAMO POWERPLANT TO FAIRMONT								
The Metropolitan Water District of Southern California	Q AF	0	2182.8	556500.0	29116.7	0	0	585616.7
	C CFS	0	3.59274	853.38233	44.22848	31.51693	0	929.12774
San Bernardino Valley Municipal Water District	Q AF	0	395.4	102600.0	3499.6	0	0	106099.6
	C CFS	0	0.65080	172.33413	5.56045	0.73809	0	178.63267
San Gabriel Valley Municipal Water District	Q AF	0	111.0	28800.0	982.4	0	0	29782.4
	C CFS	0	0.18270	45.15128	1.56091	1.25670	0	47.96889
San Geronio Pass Water Agency	Q AF	0	66.7	17300.0	590.2	0	0	17890.2
	C CFS	0	0.10978	29.05110	0.93777	0.12679	0	30.11566
Crestline-Lake Arrowhead Water Agency	Q AF	0	22.3	5800.0	197.8	0	0	5997.8
	C CFS	0	0.03670	9.75185	0.31429	0.03857	0	10.10471
Mojave Water Agency	Q AF	0	194.4	50800.0	1349.4	0	0	52149.4
	C CFS	0	0.31997	70.16895	2.22102	5.26267	0	77.65264
Desert Water Agency	Q AF	0	145.8	38100.0	1012.0	0	0	39112.0
	C CFS	0	0.23998	63.98091	1.66568	0.24980	0	65.89639
Coachella Valley County Water District	Q AF	0	88.4	23100.0	613.6	0	0	23713.6
	C CFS	0	0.14550	38.80294	1.00994	0.14777	0	39.96065
Antelope Valley-East Kern Water Agency	Q AF	69600.0	519.3	138400.0	914.3	0	0	139314.3
	C CFS	96.13699	0.85473	191.16896	1.50488	14.33767	0	207.01151
Littlerock Creek Irrigation District	Q AF	0	8.7	2300.0	30.5	0	0	2330.5
	C CFS	0	0.01432	3.17694	0.05020	0.23827	0	3.46541
Palmdale Water District	Q AF	0	65.2	17300.0	193.5	0	0	17493.5
	C CFS	0	0.10731	23.89612	0.31849	1.79221	0	26.00682
TOTALS	Q AF	69600.0	3800.0	981000.0	38500.0	0	0	1019500.0
	C CFS	96.13699	6.25454	1500.86551	59.37211	55.70547	0	1615.94309
REACH 19C - BUTTES JUNCTION THRU BUTTES RESERVOIR								
Antelope Valley-East Kern Water Agency	Q AF	0	0	0	0	0	0	27800.0
	C AF	27800.0	0	27800.0	0	0	0	27800.0
TOTALS	Q AF	0	0	0	0	0	0	27800.0
	C AF	27800.0	0	27800.0	0	0	0	27800.0
REACH 20A - FAIRMONT THRU 70TH STREET WEST								
The Metropolitan Water District of Southern California	Q AF	0	2220.0	556500.0	26933.9	0	0	583433.9
	C CFS	0	3.65397	853.38233	40.63574	31.51693	0	925.53500
San Bernardino Valley Municipal Water District	Q AF	0	402.2	102600.0	3104.2	0	0	105704.2
	C CFS	0	0.66199	172.33413	4.90965	0.73809	0	177.98187
San Gabriel Valley Municipal Water District	Q AF	0	112.9	28800.0	871.4	0	0	29671.4
	C CFS	0	0.18583	45.15128	1.37822	1.25670	0	47.78620
San Geronio Pass Water Agency	Q AF	0	67.8	17300.0	523.5	0	0	17823.5
	C CFS	0	0.11159	29.05110	0.82798	0.12679	0	30.00587
Crestline-Lake Arrowhead Water Agency	Q AF	0	22.8	5800.0	175.5	0	0	5975.5
	C CFS	0	0.03753	9.75185	0.27758	0.03857	0	10.06800
Mojave Water Agency	Q AF	0	197.7	50800.0	1155.0	0	0	51955.0
	C CFS	0	0.32540	70.16895	1.90105	5.26267	0	77.33267
Desert Water Agency	Q AF	0	148.3	38100.0	866.2	0	0	38966.2
	C CFS	0	0.24409	63.98091	1.42571	0.24980	0	65.65642
Coachella Valley County Water District	Q AF	0	89.9	23100.0	525.2	0	0	23625.2
	C CFS	0	0.14797	38.80294	0.86444	0.14777	0	39.81515
Antelope Valley-East Kern Water Agency	Q AF	47100.0	263.3	68800.0	395.0	0	0	69195.0
	C CFS	65.05822	0.43337	95.03197	0.65014	0	0	95.68211
Littlerock Creek Irrigation District	Q AF	0	8.8	2300.0	21.8	0	0	2321.8
	C CFS	0	0.01448	3.17694	0.03588	0.23827	0	3.45109
Palmdale Water District	Q AF	0	66.3	17300.0	128.3	0	0	17428.3
	C CFS	0	0.10913	23.89612	0.21117	1.79221	0	25.89950
TOTALS	Q AF	47100.0	3600.0	911400.0	34700.0	0	0	946100.0
	C CFS	65.05822	5.92535	1404.72852	53.11757	41.36780	0	1499.21389



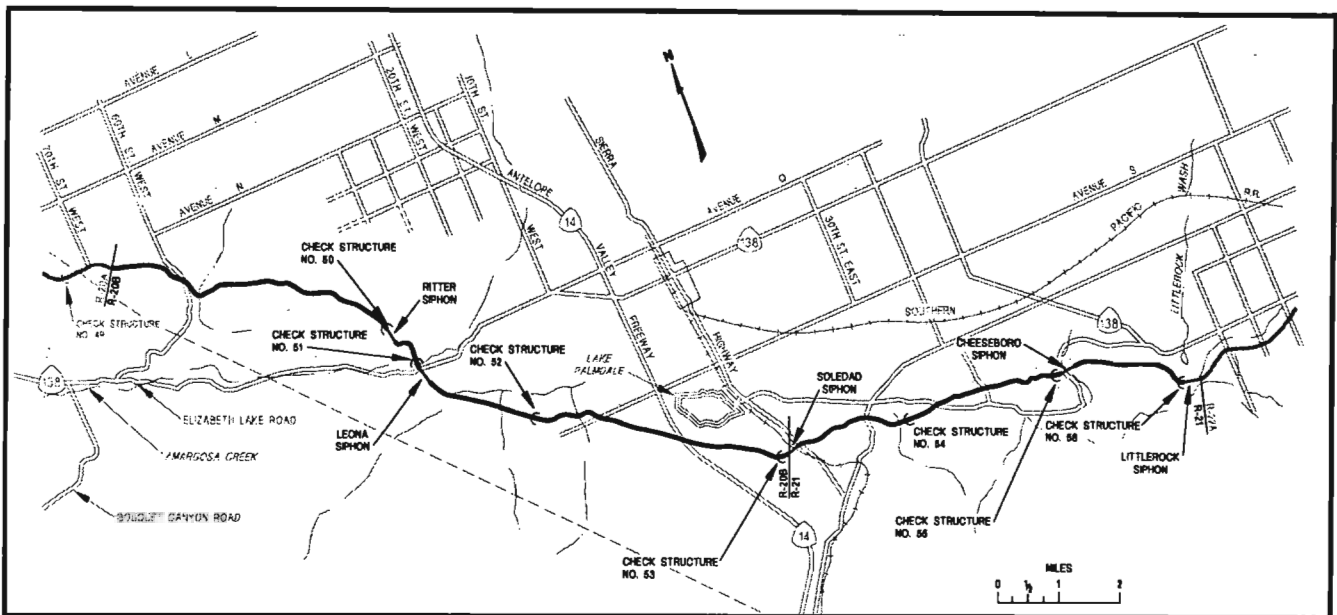
Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	ALAMO POWERPLANT TO FAIRMONT - REACH 19
0.57441560			585616.7	0.57441560		Q AF	The Metropolitan Water District of Southern California
0.57497553	0.57469556	0	929.12774	0.57497553	0.57469556	C CFS	San Bernardino Valley Municipal Water District
0.10407023	0.10730707	0	106099.6	0.10407023	0.10730707	Q AF	San Gabriel Valley Municipal Water District
0.11054391			178.63267	0.11054391		C CFS	San Geronio Pass Water Agency
0.02921275			29782.4	0.02921275		Q AF	Crestline-Lake Arrowhead Water Agency
0.02968477	0.02944876	0	47.96889	0.02968477	0.02944876	C CFS	
0.01754801			17890.2	0.01754801		Q AF	
0.01863658	0.01809230	0	30.11566	0.01863658	0.01809230	C CFS	
0.00588308			5997.8	0.00588308		Q AF	
0.00625313	0.00606811	0	10.10471	0.00625313	0.00606811	C CFS	
0.05115194			52149.4	0.05115194		Q AF	Mojave Water Agency
0.04805407	0.04960300	0	77.65264	0.04805407	0.04960300	C CFS	
0.03836390			39112.0	0.03836390		Q AF	Desert Water Agency
0.04077891	0.03957141	0	65.89639	0.04077891	0.03957141	C CFS	
0.02326003			23713.6	0.02326003		Q AF	Coachella Valley County Water District
0.02472900	0.02399451	0	39.96065	0.02472900	0.02399451	C CFS	
0.13664963			139314.3	0.13664963		Q AF	Antelope Valley-East Kern Water Agency
0.12810569	0.13237766	0	207.01151	0.12810569	0.13237766	C CFS	
0.00228593			2330.5	0.00228593		Q AF	Littlerock Creek Irrigation District
0.00214451	0.00221522	0	3.46541	0.00214451	0.00221522	C CFS	
0.01715890			17493.5	0.01715890		Q AF	Palmdale Water District
0.01609390	0.01662640	0	26.00682	0.01609390	0.01662640	C CFS	
1.00000000	1.00000000	0	1019500.0	1.00000000		Q AF	TOTALS
1.00000000			1615.94309	1.00000000		C CFS	
							BUTTES JUNCTION THRU BUTTES RESERVOIR - REACH 19C
1.00000000	1.00000000		27800.0	1.00000000	1.00000000	Q AF	Antelope Valley-East Kern Water Agency
						C AF	
1.00000000	1.00000000		27800.0	1.00000000	1.00000000	Q AF	TOTALS
						C AF	
							FAIRMONT THRU 70TH STREET WEST - REACH 20A
0.61667255			583433.9	0.61667255		Q AF	The Metropolitan Water District of Southern California
0.61734687	0.61700971	0	925.53500	0.61734687	0.61700971	C CFS	San Bernardino Valley Municipal Water District
0.11172624	0.11522152	0	105704.2	0.11172624	0.11522152	Q AF	San Gabriel Valley Municipal Water District
0.11871680			177.98187	0.11871680		C CFS	San Geronio Pass Water Agency
0.03136180			29671.4	0.03136180		Q AF	Crestline-Lake Arrowhead Water Agency
0.03187417	0.03161798	0	47.78620	0.03187417	0.03161798	C CFS	
0.01883892			17823.5	0.01883892		Q AF	
0.02001440	0.01942666	0	30.00587	0.02001440	0.01942666	C CFS	
0.00631593			5975.5	0.00631593		Q AF	
0.00671552	0.00651573	0	10.06800	0.00671552	0.00651573	C CFS	
0.05491491			51955.0	0.05491491		Q AF	Mojave Water Agency
0.05158215	0.05324853	0	77.33267	0.05158215	0.05324853	C CFS	
0.04118613			38966.2	0.04118613		Q AF	Desert Water Agency
0.04379390	0.04249001	0	65.65642	0.04379390	0.04249001	C CFS	
0.02497115			23625.2	0.02497115		Q AF	Coachella Valley County Water District
0.02655735	0.02576425	0	39.81515	0.02655735	0.02576425	C CFS	
0.07313709			69195.0	0.07313709		Q AF	Antelope Valley-East Kern Water Agency
0.06382152	0.06847931	0	95.68211	0.06382152	0.06847931	C CFS	
0.00245408			2321.8	0.00245408		Q AF	Littlerock Creek Irrigation District
0.00230193	0.00237800	0	3.45109	0.00230193	0.00237800	C CFS	
0.01842120			17428.3	0.01842120		Q AF	Palmdale Water District
0.01727539	0.01784830	0	25.89950	0.01727539	0.01784830	C CFS	
1.00000000	1.00000000	0	946100.0	1.00000000		Q AF	TOTALS
1.00000000			1499.21389	1.00000000		C CFS	

TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)



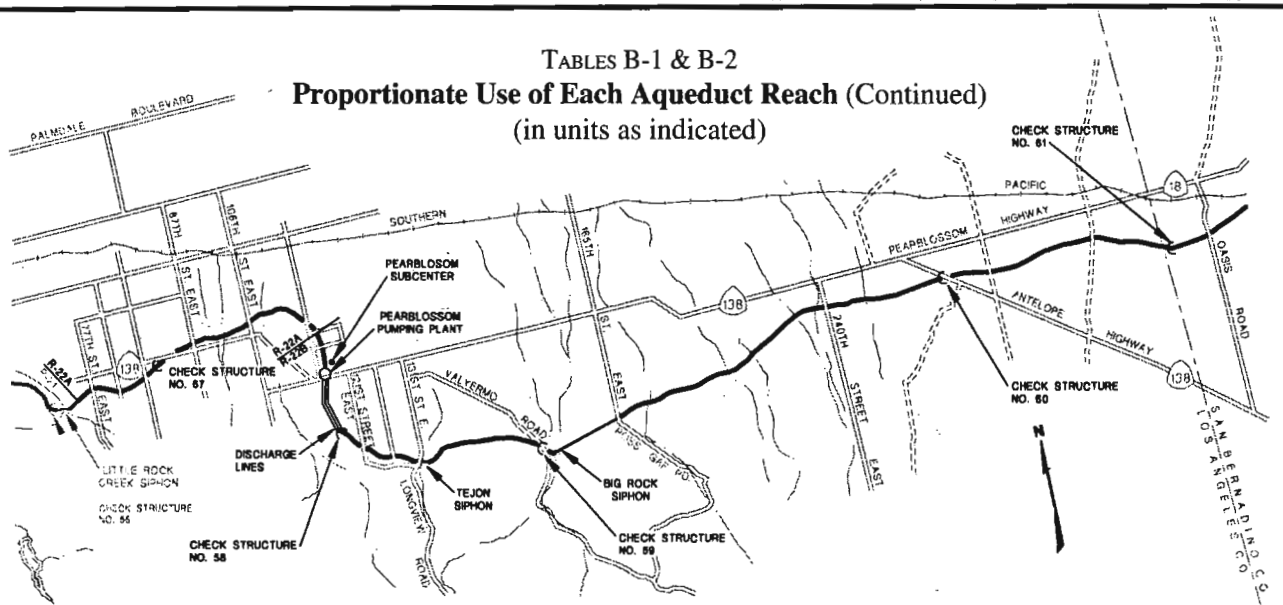
Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of			
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 20B - 70TH STREET WEST TO PALMDALE								
The Metropolitan Water District of Southern California	Q AF	0	2077.2	556500.0	24713.9	0	0	581213.9
	C CFS	0	3.41893	853.38233	36.96177	31.51693	0	921.88103
San Bernardino Valley Municipal Water District	Q AF	0	376.3	102600.0	2702.0	0	0	105302.0
	C CFS	0	0.61936	172.33413	4.24766	0.73809	0	177.31988
San Gabriel Valley Municipal Water District	Q AF	0	105.6	28800.0	758.5	0	0	29558.5
	C CFS	0	0.17381	45.15128	1.19239	1.25670	0	47.60037
San Geronio Pass Water Agency	Q AF	0	63.5	17300.0	455.7	0	0	17755.7
	C CFS	0	0.10452	29.05110	0.71639	0.12679	0	29.89428
Crestline-Lake Arrowhead Water Agency	Q AF	0	21.3	5800.00000	152.7	0	0	5952.7
	C CFS	0	0.03506	9.75185	0.24006	0.03857	0	10.03048
Mojave Water Agency	Q AF	0	185.0	50800.0	957.3	0	0	51757.3
	C CFS	0	0.30450	70.16895	1.57565	5.26267	0	77.00727
Desert Water Agency	Q AF	0	138.7	38100.0	717.9	0	0	38817.9
	C CFS	0	0.22829	63.98091	1.18161	0.24980	0	65.41232
Coachella Valley County Water District	Q AF	0	84.1	23100.0	435.3	0	0	23535.3
	C CFS	0	0.13842	38.80294	0.71647	0.14777	0	39.66718
Antelope Valley-East Kern Water Agency	Q AF	0	78.0	21700.0	131.7	0	0	21831.7
	C CFS	0	0.12838	29.97375	0.21677	0	0	30.19052
Littlerock Creek Irrigation District	Q AF	0	8.3	2300.0	13.0	0	0	2313.0
	C CFS	0	0.01366	3.17694	0.02140	0.23827	0	3.43661
Palmdale Water District	Q AF	17300.0	62.0	17300.0	62.0	0	0	17362.0
	C CFS	23.89612	0.10205	23.89612	0.10205	1.79221	0	25.79038
TOTALS	Q AF	17300.0	3200.0	864300.0	31100.0	0	0	895400.0
	C CFS	23.89612	5.26698	1339.67030	47.19221	41.36780	0	1428.23031
REACH 21 - PALMDALE TO LITTLEROCK CREEK								
The Metropolitan Water District of Southern California	Q AF	0	1191.5	556500.0	22636.7	0	0	579136.7
	C CFS	0	1.96113	853.38233	33.56284	31.51693	0	918.46210
San Bernardino Valley Municipal Water District	Q AF	0	215.9	102600.0	2325.7	0	0	104925.7
	C CFS	0	0.35536	172.33413	3.62829	0.73809	0	176.70051
San Gabriel Valley Municipal Water District	Q AF	0	60.6	28800.0	652.9	0	0	29452.9
	C CFS	0	0.09974	45.15128	1.01858	1.25670	0	47.42656
San Geronio Pass Water Agency	Q AF	0	36.4	17300.0	392.2	0	0	17692.2
	C CFS	0	0.05991	29.05110	0.61187	0.12679	0	29.78976
Crestline-Lake Arrowhead Water Agency	Q AF	0	12.2	5800.0	131.4	0	0	5931.4
	C CFS	0	0.02008	9.75185	0.20500	0.03857	0	9.99542
Mojave Water Agency	Q AF	0	106.1	50800.0	772.3	0	0	51572.3
	C CFS	0	0.17463	70.16895	1.27115	5.26267	0	76.70277
Desert Water Agency	Q AF	0	79.6	38100.0	579.2	0	0	38679.2
	C CFS	0	0.13102	63.98091	0.95332	0.24980	0	65.18403
Coachella Valley County Water District	Q AF	0	48.2	23100.0	351.2	0	0	23451.2
	C CFS	0	0.07933	38.80294	0.57805	0.14777	0	39.52876
Antelope Valley-East Kern Water Agency	Q AF	10800.0	44.8	21700.0	53.7	0	0	21753.7
	C CFS	14.91781	0.07374	29.97375	0.08839	0	0	30.06214
Littlerock Creek Irrigation District	Q AF	2300.0	4.7	2300.0	4.7	0	0	2304.7
	C CFS	3.17694	0.00774	3.17694	0.00774	0.23827	0	3.42295
TOTALS	Q AF	13100.0	1800.0	847000.0	27900.0	0	0	874900.0
	C CFS	18.09475	2.96268	1315.77418	41.92523	39.57559	0	1397.27500



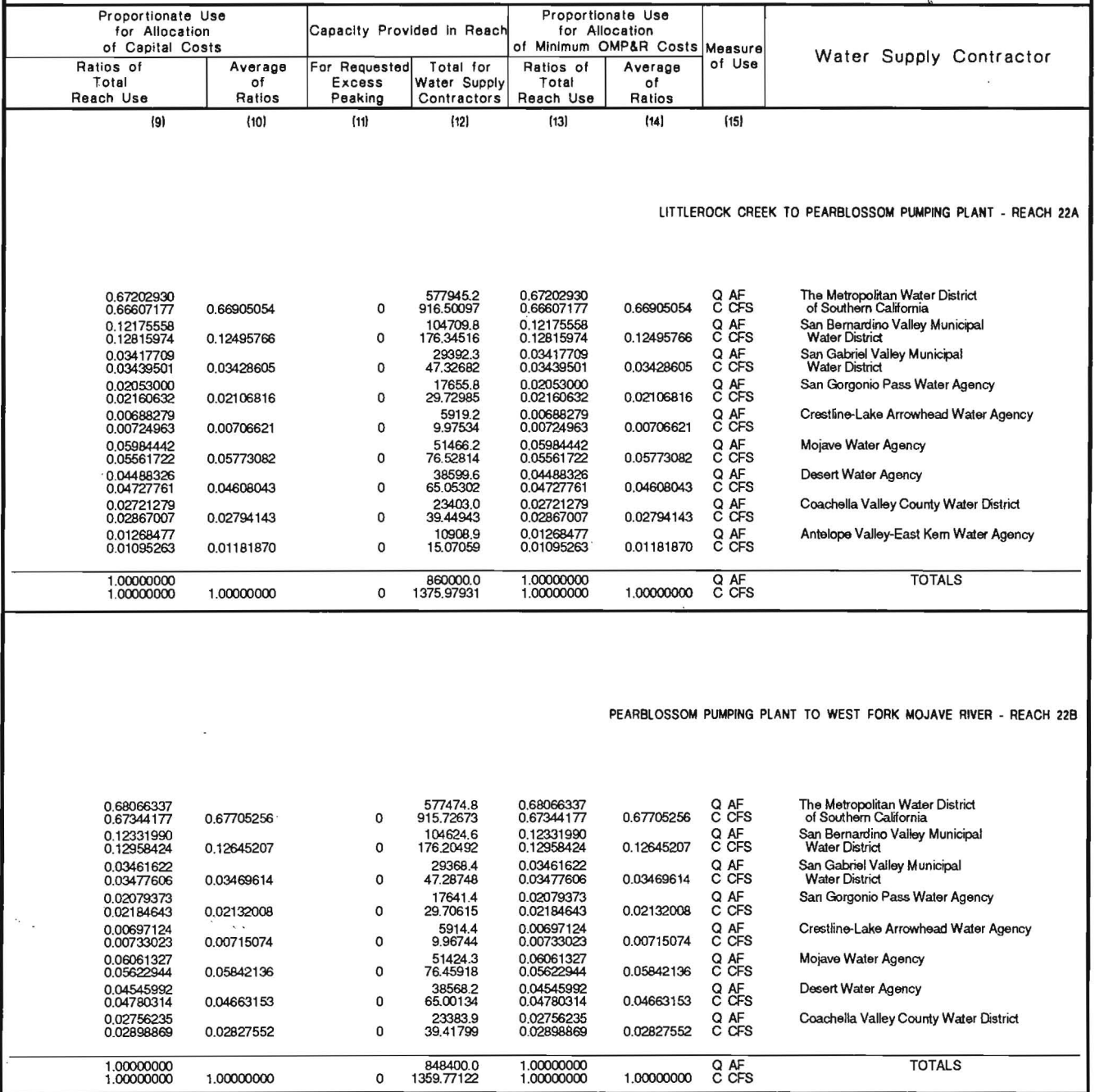


Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
70TH STREET WEST TO PALMDALE - REACH 20B							
0.64911090			581213.9	0.64911090		Q AF	The Metropolitan Water District
0.64547085	0.64729087	0	921.88103	0.64547085	0.64729087	C CFS	of Southern California
0.11760331			105302.0	0.11760331		Q AF	San Bernardino Valley Municipal
0.12415356	0.12087843	0	177.31988	0.12415356	0.12087843	C CFS	Water District
0.03301150			29558.5	0.03301150		Q AF	San Gabriel Valley Municipal
0.03332822	0.03316986	0	47.60037	0.03332822	0.03316986	C CFS	Water District
0.01982991			17755.7	0.01982991		Q AF	San Gorgonio Pass Water Agency
0.02093099	0.02038045	0	29.89428	0.02093099	0.02038045	C CFS	
0.00664809			5952.7	0.00664809		Q AF	Crestline-Lake Arrowhead Water Agency
0.00702301	0.00683555	0	10.03048	0.00702301	0.00683555	C CFS	
0.05780355			51757.3	0.05780355		Q AF	Mojave Water Agency
0.05391796	0.05586076	0	77.00727	0.05391796	0.05586076	C CFS	
0.04335258			38817.9	0.04335258		Q AF	Desert Water Agency
0.04579956	0.04457607	0	65.41232	0.04579956	0.04457607	C CFS	
0.02628468			23535.3	0.02628468		Q AF	Coachella Valley County Water District
0.02777366	0.02702917	0	39.66718	0.02777366	0.02702917	C CFS	
0.02438206			21831.7	0.02438206		Q AF	Antelope Valley-East Kern Water Agency
0.02113841	0.02276024	0	30.19052	0.02113841	0.02276024	C CFS	
0.00258320			2313.0	0.00258320		Q AF	Littlerock Creek Irrigation District
0.00240620	0.00249470	0	3.43661	0.00240620	0.00249470	C CFS	
0.01939022			17362.0	0.01939022		Q AF	Palmdale Water District
0.01805758	0.01872390	0	25.79038	0.01805758	0.01872390	C CFS	
1.00000000			895400.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	1428.23031	1.00000000	1.00000000	C CFS	
PALMDALE TO LITTLOCK CREEK - REACH 21							
0.66194617			579136.7	0.66194617		Q AF	The Metropolitan Water District
0.65732379	0.65963498	0	918.46210	0.65732379	0.65963498	C CFS	of Southern California
0.11992879			104925.7	0.11992879		Q AF	San Bernardino Valley Municipal
0.12646080	0.12319480	0	176.70051	0.12646080	0.12319480	C CFS	Water District
0.03366430			29452.9	0.03366430		Q AF	San Gabriel Valley Municipal
0.03394218	0.03380324	0	47.42656	0.03394218	0.03380324	C CFS	Water District
0.02022197			17692.2	0.02022197		Q AF	San Gorgonio Pass Water Agency
0.02131990	0.02077093	0	29.78976	0.02131990	0.02077093	C CFS	
0.00677952			5931.4	0.00677952		Q AF	Crestline-Lake Arrowhead Water Agency
0.00715351	0.00696651	0	9.99542	0.00715351	0.00696651	C CFS	
0.05894651			51572.3	0.05894651		Q AF	Mojave Water Agency
0.05489454	0.05692053	0	76.70277	0.05489454	0.05692053	C CFS	
0.04420985			38679.2	0.04420985		Q AF	Desert Water Agency
0.04665083	0.04543034	0	65.18403	0.04665083	0.04543034	C CFS	
0.02680444			23451.2	0.02680444		Q AF	Coachella Valley County Water District
0.02828989	0.02754716	0	39.52876	0.02828989	0.02754716	C CFS	
0.02486421			21753.7	0.02486421		Q AF	Antelope Valley-East Kern Water Agency
0.02151483	0.02318952	0	30.06214	0.02151483	0.02318952	C CFS	
0.00263424			2304.7	0.00263424		Q AF	Littlerock Creek Irrigation District
0.00244973	0.00254199	0	3.42295	0.00244973	0.00254199	C CFS	
1.00000000			874900.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	1397.275	1.00000000	1.00000000	C CFS	

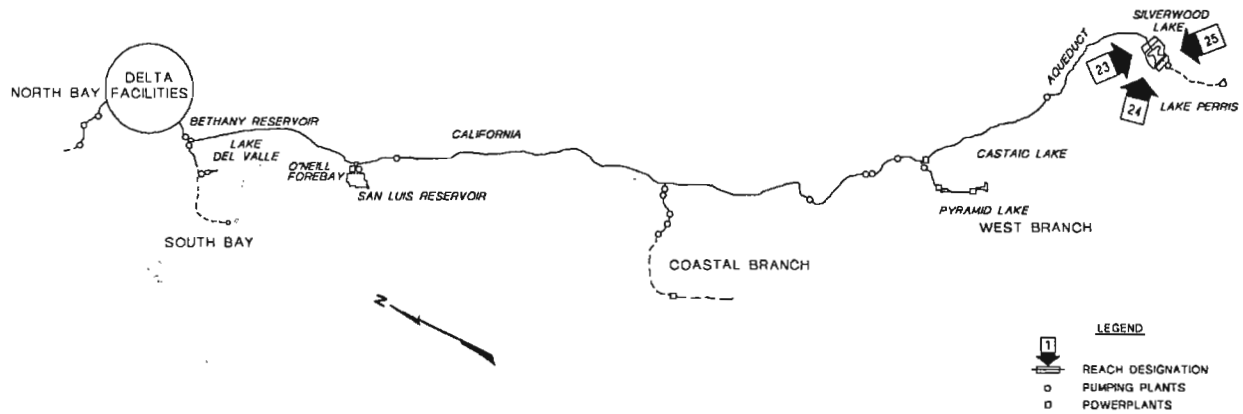
TABLES B-1 & B-2  
Proportionate Use of Each Aqueduct Reach (Continued)  
(in units as indicated)



Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 22A - LITTLEROCK CREEK TO PEARBLOSSOM PUMPING PLANT								
The Metropolitan Water District of Southern California	Q AF	0	470.4	556500.0	21445.2	0	0	577945.2
	C CFS	0	0.77425	853.38233	31.60171	31.51693	0	916.50097
San Bernardino Valley Municipal Water District	Q AF	0	85.2	102600.0	2109.8	0	0	104709.8
	C CFS	0	0.14023	172.33413	3.27294	0.73809	0	176.34516
San Gabriel Valley Municipal Water District	Q AF	0	23.9	28800.0	592.3	0	0	29392.3
	C CFS	0	0.03934	45.15128	0.91884	1.25670	0	47.32682
San Geronimo Pass Water Agency	Q AF	0	14.4	17300.0	355.8	0	0	17655.8
	C CFS	0	0.02370	29.05110	0.55196	0.12679	0	29.72985
Crestline-Lake Arrowhead Water Agency	Q AF	0	4.8	5800.0	119.2	0	0	5919.2
	C CFS	0	0.00790	9.75185	0.18492	0.03857	0	9.97534
Mojave Water Agency	Q AF	0	41.9	50800.0	666.2	0	0	51466.2
	C CFS	0	0.06896	70.16895	1.09652	5.26267	0	76.52814
Desert Water Agency	Q AF	0	31.4	38100.0	498.6	0	0	38598.6
	C CFS	0	0.05168	63.98091	0.82231	0.24980	0	65.05302
Coachella Valley County Water District	Q AF	0	19.1	23100.0	303.0	0	0	23403.0
	C CFS	0	0.03144	38.80294	0.49872	0.14777	0	39.44943
Antelope Valley-East Kern Water Agency	Q AF	10900.0	8.9	10900.0	8.9	0	0	10908.9
	C CFS	15.05594	0.01465	15.05594	0.01465	0	0	15.07059
TOTALS	Q AF	10900.0	700.0	833900.0	26100.0	0	0	860000.0
	C CFS	15.05594	1.15215	1297.67943	38.96256	39.33732	0	1375.97931
REACH 22B - PEARBLOSSOM PUMPING PLANT TO WEST FORK MOJAVE RIVER								
The Metropolitan Water District of Southern California	Q AF	0	7010.8	556500.0	20974.8	0	0	577474.8
	C CFS	0	11.53930	853.38233	30.82747	31.51693	0	915.72673
San Bernardino Valley Municipal Water District	Q AF	0	1270.2	102600.0	2024.6	0	0	104624.6
	C CFS	0	2.09066	172.33413	3.13270	0.73809	0	176.20492
San Gabriel Valley Municipal Water District	Q AF	0	356.6	28800.0	568.4	0	0	29368.4
	C CFS	0	0.58694	45.15128	0.87950	1.25670	0	47.28748
San Geronimo Pass Water Agency	Q AF	0	214.2	17300.0	341.4	0	0	17641.4
	C CFS	0	0.35256	29.05110	0.52826	0.12679	0	29.70615
Crestline-Lake Arrowhead Water Agency	Q AF	0	71.8	5800.0	114.4	0	0	5914.4
	C CFS	0	0.11818	9.75185	0.17702	0.03857	0	9.96744
Mojave Water Agency	Q AF	50800.0	624.3	50800.0	624.3	0	0	51424.3
	C CFS	70.16895	1.02756	70.16895	1.02756	5.26267	0	76.45918
Desert Water Agency	Q AF	38100.0	468.2	38100.0	468.2	0	0	38568.2
	C CFS	52.62671	0.77063	63.98091	0.77063	0.24980	0	65.00134
Coachella Valley County Water District	Q AF	23100.0	283.9	23100.0	283.9	0	0	23383.9
	C CFS	31.90754	0.46728	38.80294	0.46728	0.14777	0	39.41799
TOTALS	Q AF	112000.0	10300.0	823000.0	25400.0	0	0	848400.0
	C CFS	154.70320	16.95310	1282.62349	37.81041	39.33732	0	1359.77122

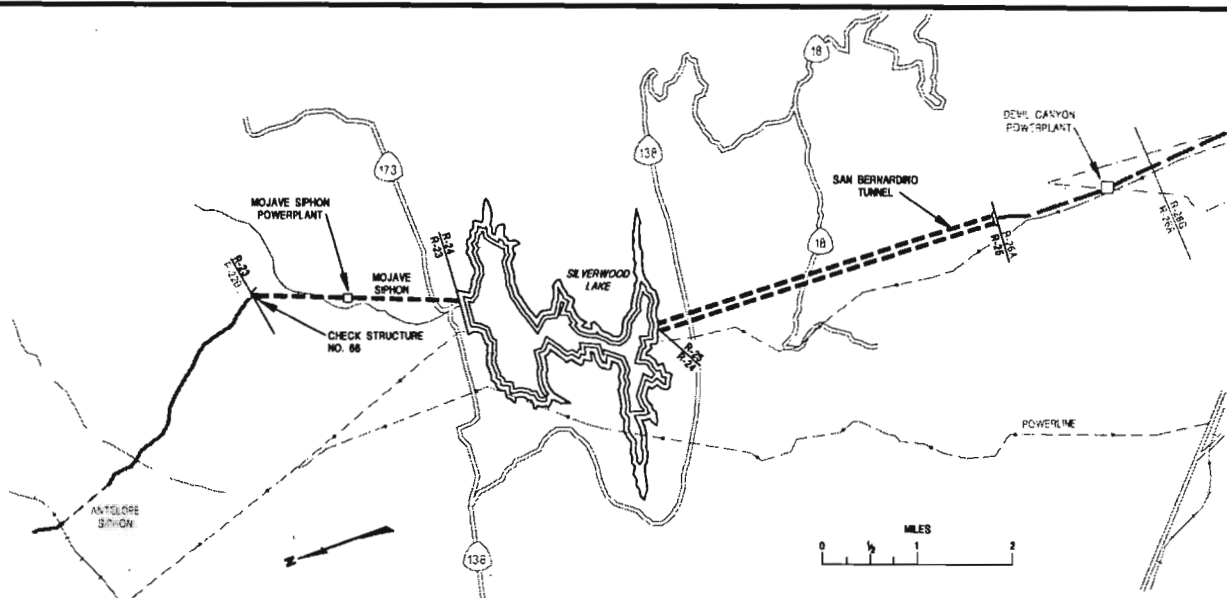


**TABLES B-1 & B-2**  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)



Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of			
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 23 - WEST FORK MOJAVE RIVER TO SILVERWOOD LAKE								
The Metropolitan Water District of Southern California	Q AF	0	0	556500.0	13964.0	0	0	570464.0
	C CFS	84.70080	0	853.38233	19.28817	31.51693	0	904.18743
San Bernardino Valley Municipal Water District	Q AF	0	0	102600.0	754.4	0	0	103354.4
	C CFS	30.61495	0	172.33413	1.04204	0.73809	0	174.11426
San Gabriel Valley Municipal Water District	Q AF	0	0	28800.0	211.8	0	0	29011.8
	C CFS	5.37046	0	45.15128	0.29256	1.25670	0	46.70054
San Gorgonio Pass Water Agency	Q AF	0	0	17300.0	127.2	0	0	17427.2
	C CFS	5.15498	0	29.05110	0.17570	0.12679	0	29.35359
Crestline-Lake Arrowhead Water Agency	Q AF	0	0	5800.0	42.6	0	0	5842.6
	C CFS	1.74043	0	9.75185	0.05884	0.03857	0	9.84926
Desert Water Agency	Q AF	0	0	0	0	0	1377.0	1377.0
	C CFS	0	0	0	0	0.72599	9.67988	10.40587
Coachella Valley County Water District	Q AF	0	0	0	0	0	835.0	835.0
	C CFS	0	0	0	0	0.44017	5.86890	6.30907
TOTALS	Q AF	0	0	711000.0	15100.0	0	2212.0	728312.0
	C CFS	127.58162	0	1109.67069	20.85731	34.84324	15.54878	1180.92002
REACH 24 - CEDAR SPRINGS DAM AND SILVERWOOD LAKE								
The Metropolitan Water District of Southern California	Q AF	0	4164	556500.0	13964.0	0		840.9 *
	C AF	46050.00000	1053	46050	1053	0		47103
San Bernardino Valley Municipal Water District	Q AF	0	754.4	102600.0	754.4	0		152.34812 *
	C AF	16635	380	16635	380	0		17015
San Gabriel Valley Municipal Water District	Q AF	0	211.8	28800.0	211.8	0		42.76438 *
	C AF	3118	71	3118	71	0.00000		3189
San Gorgonio Pass Water Agency	Q AF	0	127.2	17300.0	127.2	0		25.68833 *
	C AF	2066	47	2066.00000	47.00000	0		2113
Crestline-Lake Arrowhead Water Agency	Q AF	0	42.6	5800.0	42.6	0		8.61228 *
	C AF	936	21	936	21	0		957
Desert Water Agency	Q AF	0	0	0	0	0		0.0 *
	C AF	1377	32	1377	32	0		1409
Coachella Valley County Water District	Q AF	0	0	0	0	0		0.0 *
	C AF	835	19	835	19	0		854
TOTALS	Q AF	0	5300	711000.0	15100.0	0		1070.3 *
	C AF	71017	1623	71017	1623	0		72640
REACH 25 - SILVERWOOD LAKE TO SOUTH PORTAL, SAN BERNARDINO TUNNEL								
The Metropolitan Water District of Southern California	Q AF	0	0	556500.0	9800.0	0	0	566300.0
	C CFS	0	0	894.21213	13.53653	29.24512	0	936.99378
San Bernardino Valley Municipal Water District	Q AF	0	0	102600.0	0	0	0	102600.0
	C CFS	0	0	187.06932	0	0	0	187.06932
San Gabriel Valley Municipal Water District	Q AF	0	0	28800.0	0	0	0	28800.0
	C CFS	0	0	47.73699	0	0	0	47.73699
San Gorgonio Pass Water Agency	Q AF	0	0	17300.0	0	0	0	17300.0
	C CFS	0	0	31.54288	0	0	0	31.54288
TOTALS	Q AF	0	0	705200.0	9800.0	0	0	715000.0
	C CFS	0	0	1160.56132	13.53653	29.24512	0	1203.34297

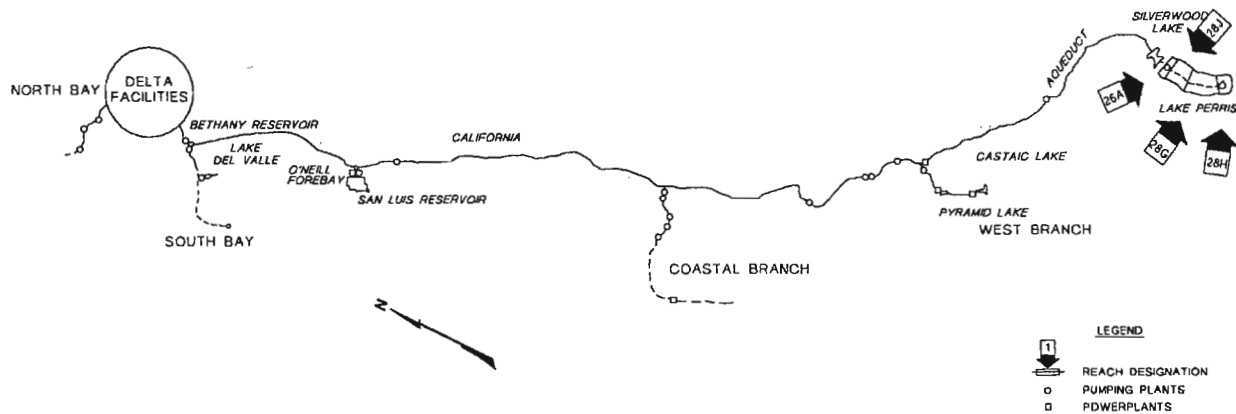
\* CFS CAPACITY FOR CONVEYANCE OF ANNUAL QUANTITIES DELIVERED FROM OR THROUGH THE RESERVOIR, EXCLUDING RESERVOIR LOSSES.



Proportionate Use for Allocation of Capital Costs		Capacity Provided In Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
WEST FORK MOJAVE RIVER TO SILVERWOOD LAKE - REACH 23							
0.78326871			570464.0	0.78326871		Q AF	The Metropolitan Water District of Southern California
0.76566356	0.77446614	0	904.18743	0.76566356	0.77446614	C CFS	San Bernardino Valley Municipal Water District
0.14190951			103354.4	0.14190951		Q AF	San Gabriel Valley Municipal Water District
0.14743950	0.14467451	0	174.11426	0.14743950	0.14467451	C CFS	San Geronio Pass Water Agency
0.03983430			29011.8	0.03983430		Q AF	Crestline-Lake Arrowhead Water Agency
0.03954590	0.03969010	0	46.70054	0.03954590	0.03969010	C CFS	Desert Water Agency
0.02392821			17427.2	0.02392821		Q AF	Coachella Valley County Water District
0.02485654	0.02439237	0	29.35359	0.02485654	0.02439237	C CFS	
0.00802211			5842.6	0.00802211		Q AF	
0.00834033	0.00818122	0	9.84926	0.00834033	0.00818122	C CFS	
0.00189067			1377.0	0.00189067		Q AF	
0.00881166	0.00535117	0	10.40587	0.00881166	0.00535117	C CFS	
0.00114649			835.0	0.00114649		Q AF	
0.00534251	0.00324449	0	6.30907	0.00534251	0.00324449	C CFS	
1.00000000			728312.0	1.00000000		Q AF	
1.00000000	1.00000000	0	1180.92002	1.00000000	1.00000000	C CFS	
CEDAR SPRINGS DAM AND SILVERWOOD LAKE - REACH 24							
0.78565483			840.9 *	0.78565483		Q AF	The Metropolitan Water District of Southern California
0.64844438	0.66607404 344438	.66607404	47103	0.64744438	0.66607404 @	C AF	San Bernardino Valley Municipal Water District
0.14234184			152.34812 *	0.14234184		Q AF	San Gabriel Valley Municipal Water District
0.23423733	0.22243002 423733	.22243002	17015	0.23423733	0.22243002 @	C AF	San Geronio Pass Water Agency
0.03995560			42.76438 *	0.03995560		Q AF	Crestline-Lake Arrowhead Water Agency
0.04390143	0.04339444 390143	.04339444	3189	0.04390143	0.04339444 @	C AF	Desert Water Agency
0.02400111			25.68833 *	0.02400111		Q AF	Coachella Valley County Water District
0.02908866	0.02843498 308866	.02843498	2113	0.02908866	0.02843498 @	C AF	
0.00804662			8.61228 *	0.00804662		Q AF	
0.01317456	0.01251569 317456	.01251569	957	0.01317456	0.01251569 @	C AF	
0.00000000			0.0 *	0.00000000		Q AF	
0.01939703	0.01690478 339703	.01690478	1409	0.01939703	0.01690478 @	C AF	
0.00000000			0.0 *	0.00000000		Q AF	
0.01175661	0.01024605 175661	.01024605	854	0.01175661	0.01024605 @	C AF	
1.00000000			1070.3 *	1.00000000		Q AF	
1.00000000	1.00000000 000000	1.00000000	72640	1.00000000	1.00000000 @	C AF	
SILVERWOOD LAKE TO SOUTH PORTAL, SAN BERNARDINO TUNNEL - REACH 25							
0.79202797			566300.0	0.79202797		Q AF	The Metropolitan Water District of Southern California
0.77865896	0.78534346	787.00000	1723.99378	0.85713566	0.82458181	C CFS	San Bernardino Valley Municipal Water District
0.14349650			102600.0	0.14349650		Q AF	San Gabriel Valley Municipal Water District
0.15545802	0.14947726	0	187.06932	0.09300717	0.11825184	C CFS	San Geronio Pass Water Agency
0.04027972			28800.0	0.04027972		Q AF	Crestline-Lake Arrowhead Water Agency
0.03967031	0.03997502	21.00000	68.73699	0.03417467	0.03722720	C CFS	Desert Water Agency
0.02419581			17300.0	0.02419581		Q AF	Coachella Valley County Water District
0.02621271	0.02520426	0	31.54288	0.01568250	0.01993915	C CFS	
1.00000000			715000.0	1.00000000		Q AF	
1.00000000	1.00000000	808.00000	2011.34297	1.00000000	1.00000000	C CFS	TOTALS

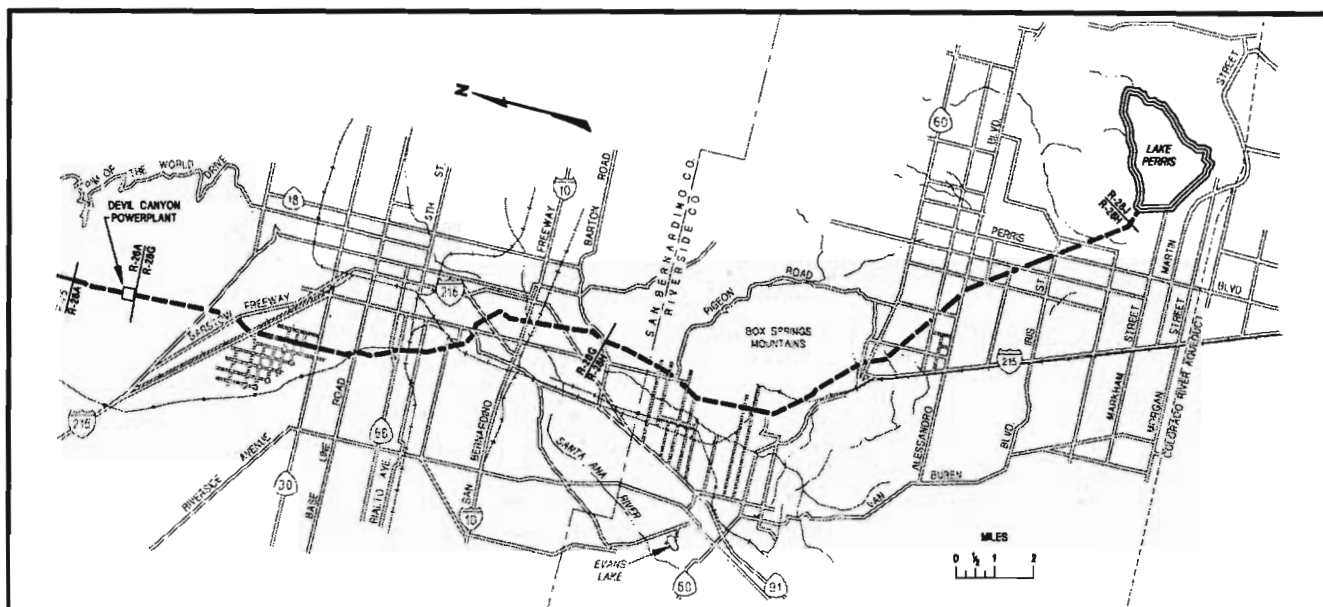
\* CFS CAPACITY FOR CONVEYANCE OF ANNUAL QUANTITIES DELIVERED FROM OR THROUGH THE RESERVOIR, EXCLUDING RESERVOIR LOSSES.  
 @ SUMMATION OF QUANTITY RATIO WEIGHTED BY .12848628 AND CAPACITY RATIO WEIGHTED BY .87151372

**TABLES B-1 & B-2**  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)



Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of			
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 26A - SOUTH PORTAL, SAN BERNARDINO TUNNEL THRU DEVIL CANYON POWERPLANT								
The Metropolitan Water District of Southern California	Q AF	284000.0	0	556500.0	9800.0	0	0	566300.0
	C CFS	517.81372	0	894.21213	13.53653	29.24512	0	936.99378
San Bernardino Valley Municipal Water District	Q AF	88900.0	0	102600.0	0	0	0	102600.0
	C CFS	162.09028	0	187.06932	0	0	0	187.06932
San Gabriel Valley Municipal Water District	Q AF	28800.0	0	28800.0	0	0	0	28800.0
	C CFS	47.73699	0	47.73699	0	0	0	47.73699
San Geronimo Pass Water Agency	Q AF	17300.0	0	17300.0	0	0	0	17300.0
	C CFS	31.54288	0	31.54288	0	0	0	31.54288
TOTALS	Q AF	419000.0	0	705200.0	9800.0	0	0	715000.0
	C CFS	759.18387	0	1160.56132	13.53653	29.24512	0	1203.34297
REACH 28G - DEVIL CANYON POWERPLANT TO BARTON ROAD								
The Metropolitan Water District of Southern California	Q AF	0	0	272500.0	9800.0	0	0	282300.0
	C CFS	0	0	376.39841	13.53653	29.24512	0	419.18006
San Bernardino Valley Municipal Water District	Q AF	13700.0	0	13700.0	0	0	0	13700.0
	C CFS	24.97904	0	24.97904	0	0	0	24.97904
TOTALS	Q AF	13700.0	0	286200.0	9800.0	0	0	296000.0
	C CFS	24.97904	0	401.37745	13.53653	29.24512	0	444.1591
REACH 28H - BARTON ROAD TO LAKE PERRIS								
The Metropolitan Water District of Southern California	Q AF	0	0	272500.0	9800.0	0	0	282300.0
	C CFS	0	0	376.39841	13.53653	29.24512	0	419.18006
TOTALS	Q AF	0	0	272500.0	9800.0	0	0	282300.0
	C CFS	0	0	376.39841	13.53653	29.24512	0	419.18006
REACH 28J - PERRIS DAM AND LAKE PERRIS								
The Metropolitan Water District of Southern California	Q AF	272500.0	9800.0	272500.0	9800.0	0		404.62829 *
	C AF	95999.0	3001.0	95999.0	3001.0	0		99000.0
TOTALS	Q AF	272500.0	9800.0	272500.0	9800.0	0		404.62829 *
	C AF	95999.0	3001.0	95999.0	3001.0	0		99000.0

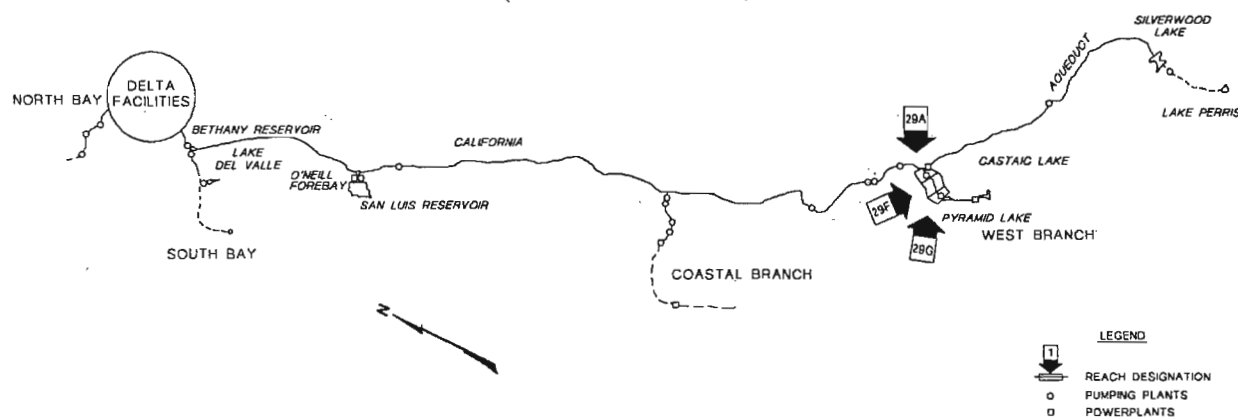
\* CFS CAPACITY FOR CONVEYANCE OF ANNUAL QUANTITIES DELIVERED FROM OR THROUGH THE RESERVOIR, EXCLUDING RESERVOIR LOSSES.



Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
SOUTH PORTAL, SAN BERNARDINO TUNNEL THRU DEVIL CANYON POWERPLANT - REACH 26A							
0.79202797			566300.0	0.79202797		Q AF	The Metropolitan Water District of Southern California
0.77865896	0.78534346	0	936.99378	0.77865896	0.78534346	C CFS	
0.14349650			102600.0	0.14349650		Q AF	
0.15545802	0.14947726	0	187.06932	0.15545802	0.14947726	C CFS	
0.04027972			28800.0	0.04027972		Q AF	
0.03967031	0.03997502	0	47.73699	0.03967031	0.03997502	C CFS	San Gabriel Valley Municipal Water District
0.02419581			17300.0	0.02419581		Q AF	San Geronio Pass Water Agency
0.02621271	0.02520426	0	31.54288	0.02621271	0.02520426	C CFS	
1.00000000			715000.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	1203.34297	1.00000000	1.00000000	C CFS	
DEVIL CANYON POWERPLANT THRU BARTON ROAD - REACH 28G							
0.95371622			282300.0	0.95371622		Q AF	The Metropolitan Water District of Southern California
0.94376105	0.94873863	0	419.18006	0.94376105	0.94873863	C CFS	
0.04628378			13700.0	0.04628378		Q AF	
0.05623895	0.05126137	0	24.97904	0.05623895	0.05126137	C CFS	San Bernardino Valley Municipal Water District
1.00000000			296000.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	444.1591	1.00000000	1.00000000	C CFS	
BARTON ROAD TO LAKE PERRIS - REACH 28H							
1.00000000			282300.0	1.00000000		Q AF	The Metropolitan Water District of Southern California
1.00000000	1.00000000	0	419.18006	1.00000000	1.00000000	C CFS	
1.00000000			282300.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	419.18006	1.00000000	1.00000000	C CFS	
PERRIS DAM AND LAKE PERRIS - REACH 28J							
1.00000000			404.62829 *	1.00000000		Q AF	The Metropolitan Water District of Southern California
1.00000000	1.00000000	99000.0	99000.0	1.00000000	1.00000000	@ C AF	
1.00000000			404.62829 *	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	99000.0	99000.0	1.00000000	1.00000000	@ C AF	

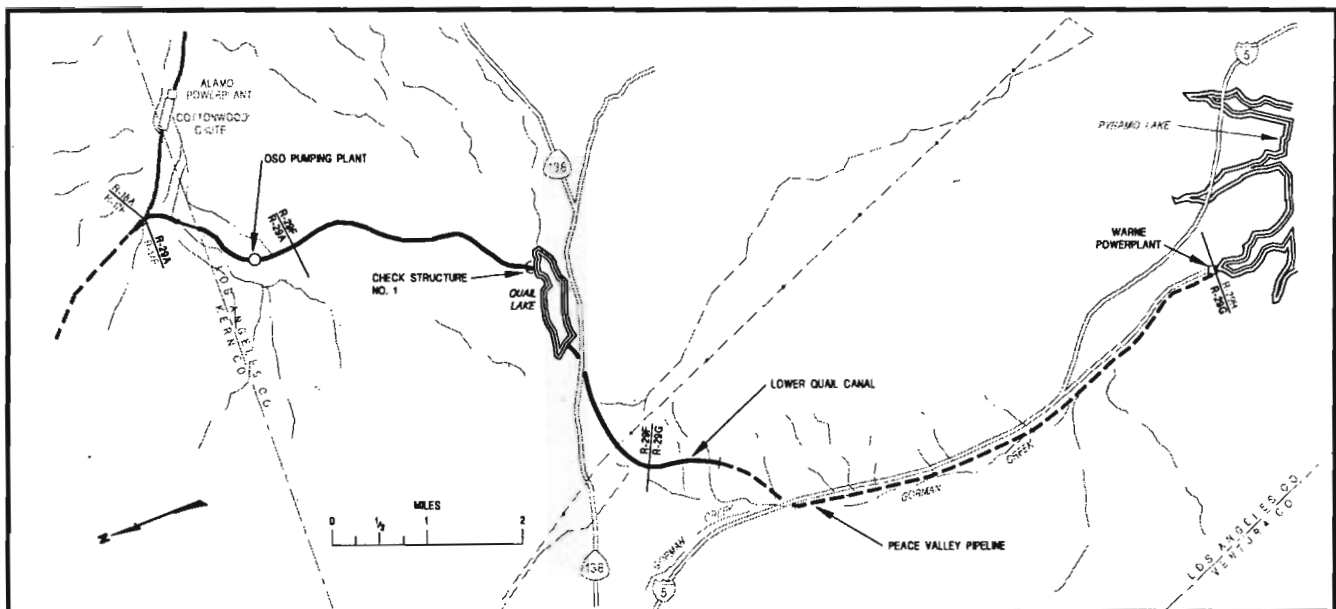
\* CFS CAPACITY FOR CONVEYANCE OF ANNUAL QUANTITIES DELIVERED FROM OR THROUGH THE RESERVOIR, EXCLUDING RESERVOIR LOSSES.  
 @ SUMMATION OF QUANTITY RATIO WEIGHTED BY 0 AND CAPACITY RATIO WEIGHTED BY 1.00000000.

TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)



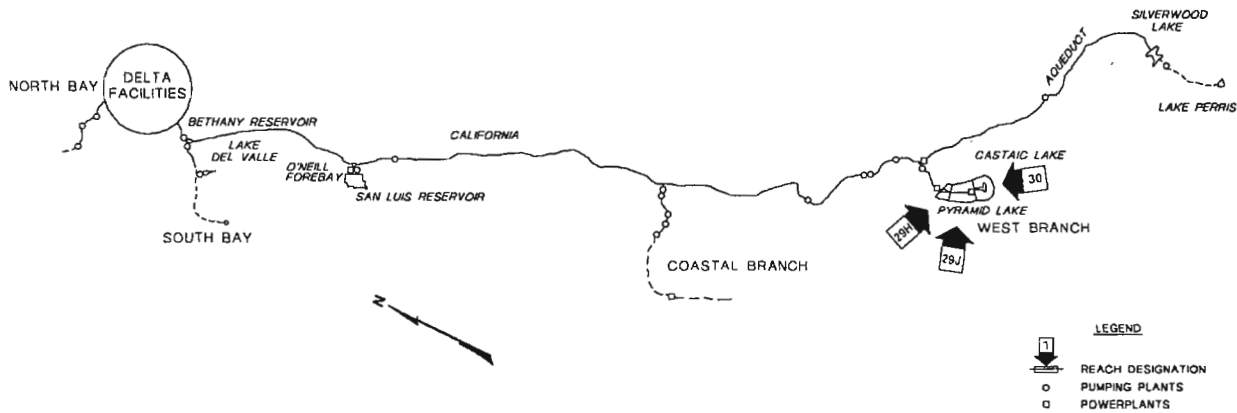
Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				
				For Delivery of Entitlements	For Compensation Of			Subtotal
					Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 29A - JUNCTION, WEST BRANCH CALIFORNIA AQUEDUCT THRU OSO PUMPING PLANT								
The Metropolitan Water District of Southern California	Q AF	0	475.7	1455000.0	26546.1	0	0	1481546.1
	C CFS	0	0.78297	2779.50593	37.75033	153.05824	0	2970.31450
Antelope Valley-East Kern Water Agency	Q AF	0	0	0	0	0	0	0
	C CFS	0	0	0	0	0	0	0
Ventura County Flood Control District	Q AF	0	6.6	20000.0	365.0	0	0	20365.0
	C CFS	0	0.01086	38.20627	0.51907	2.10390	0	40.82924
Castaic Lake Water Agency	Q AF	0	17.7	54200.0	988.9	0	0	55188.9
	C CFS	0	0.02913	103.53890	1.40628	5.70156	0	110.64674
TOTALS	Q AF	0	500.0	1529200.0	27900.0	0	0	1557100.0
	C CFS	0	0.82297	2921.25110	39.67568	160.86370	0	3121.79048
REACH 29F - OSO PUMPING PLANT THRU QUAIL EMBANKMENT								
The Metropolitan Water District of Southern California	Q AF	0	2378.7	1455000.0	26070.4	0	0	1481070.4
	C CFS	0	3.91518	2779.50593	36.96736	153.05824	0	2969.53153
Antelope Valley-East Kern Water Agency	Q AF	0	0	0	0	0	0	0
	C CFS	0	0	0	0	0	0	0
Ventura County Flood Control District	Q AF	0	32.7	20000.0	358.4	0	0	20358.4
	C CFS	0	0.05382	38.20627	0.50820	2.10390	0	40.81837
Castaic Lake Water Agency	Q AF	0	88.6	54200.0	971.2	0	0	55171.2
	C CFS	0	0.14583	103.53890	1.37715	5.70156	0	110.61761
TOTALS	Q AF	0	2500.0	1529200.0	27400.0	0	0	1556600.0
	C CFS	0	4.11483	2921.25110	38.85271	160.86370	0	3120.96751
REACH 29G - QUAIL EMBANKMENT THRU WARNE POWERPLANT								
The Metropolitan Water District of Southern California	Q AF	0	1236.9	1455000.0	23691.7	0	0	1478691.7
	C CFS	0	2.03585	2779.50593	33.05218	153.05824	0	2965.61635
Ventura County Flood Control District	Q AF	0	17.0	20000.0	325.7	0	0	20325.7
	C CFS	0	0.02798	38.20627	0.45438	2.10390	0	40.76455
Castaic Lake Water Agency	Q AF	0	46.1	54200.0	882.6	0	0	55082.6
	C CFS	0	0.07588	103.53890	1.23132	5.70156	0	110.47178
TOTALS	Q AF	0	1300.0	1529200.0	24900.0	0	0	1554100.0
	C CFS	0	2.13971	2921.25110	34.73788	160.86370	0	3116.85268





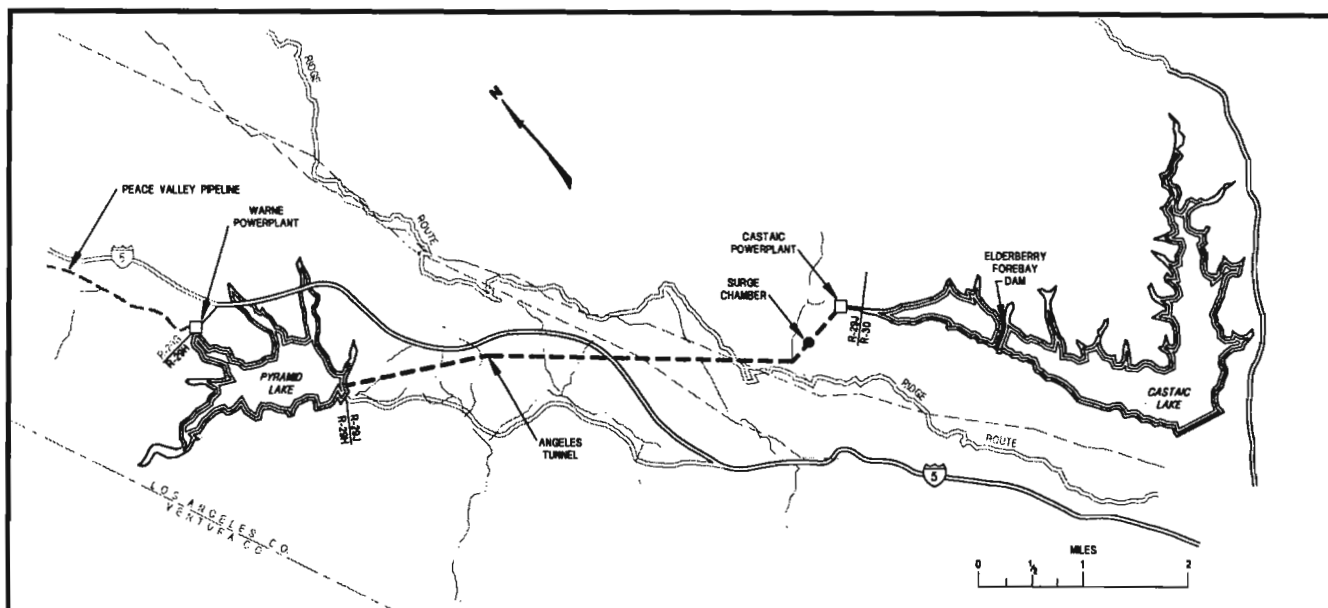
Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
JUNCTION, WEST BRANCH CALIFORNIA AQUEDUCT THRU OSO PUMPING PLANT - REACH 29A							
0.95147784	0.95147785	0	1481070.4	0.95147784	0.94859915	Q AF	The Metropolitan Water District of Southern California
0.95147787			2969.53153	0.94572046		C CFS	
0.00000000			0	0.00000000		Q AF	Antelope Valley-East Kern Water Agency
0.00000000	0.00000000	19.00000	19.00000	0.00605102	0.00302551	C CFS	
0.01307876			20358.4	0.01307876		Q AF	Ventura County Flood Control District
0.01307876	0.01307876	0	40.81837	0.01299962	0.01303919	C CFS	
0.03544340			55171.2	0.03544340		Q AF	Castaic Lake Water Agency
0.03544337	0.03544339	0	110.61761	0.03522890	0.03533615	C CFS	
1.00000000			1556600.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	19.00000	3139.96751	1.00000000	1.00000000	C CFS	
OSO PUMPING PLANT THRU QUAIL EMBANKMENT - REACH 29F							
0.95147781	0.95147783	0	1481546.1	0.95147781	0.94859988	Q AF	The Metropolitan Water District of Southern California
0.95147785			2970.31450	0.94572195		C CFS	
0.00000000			0	0.00000000		Q AF	Antelope Valley-East Kern Water Agency
0.00000000	0.00000000	19.00000	19.00000	0.00604943	0.00302472	C CFS	
0.01307880			20365.0	0.01307880		Q AF	Ventura County Flood Control District
0.01307879	0.01307880	0	40.82924	0.01299967	0.01303923	C CFS	
0.03544339			55188.9	0.03544339		Q AF	Castaic Lake Water Agency
0.03544336	0.03544337	0	110.64674	0.03522895	0.03533617	C CFS	
1.00000000			1557100.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	19.00000	3140.79048	1.00000000	1.00000000	C CFS	
QUAIL EMBANKMENT THRU WARNE POWERPLANT - REACH 29G							
0.95147783	0.95147785	0	1478691.7	0.95147783	0.95147785	Q AF	The Metropolitan Water District of Southern California
0.95147787			2965.61635	0.95147787		C CFS	
0.01307876			20325.7	0.01307876		Q AF	Ventura County Flood Control District
0.01307875	0.01307876	0	40.76455	0.01307875	0.01307876	C CFS	
0.03544341			55082.6	0.03544341		Q AF	Castaic Lake Water Agency
0.03544338	0.03544339	0	110.47178	0.03544338	0.03544339	C CFS	
1.00000000			1554100.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	3116.85268	1.00000000	1.00000000	C CFS	

TABLES B-1 & B-2  
**Proportionate Use of Each Aqueduct Reach (Continued)**  
(in units as indicated)



Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of Operational Losses	Scheduled Outages	Downstream Regulation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
REACH 29H - PYRAMID DAM AND LAKE								
The Metropolitan Water District of Southern California	Q AF	0	7040.9	1455000.0	22454.8	0		2183.38005 *
	C AF	148565.0	2189.0	148565.0	2189.0	0		150754.0
Ventura County Flood Control District	Q AF	0	96.8	20000.0	308.7	0		30.01213 *
	C AF	1225.0	18.0	1225.0	18.0	0		1243.0
Castaic Lake Water Agency	Q AF	0	262.3	54200.0	836.5	0		81.33282 *
	C AF	4034.0	59.0	4034.0	59.0	0		4093.0
TOTALS	Q AF	0	7400.0	1529200.0	23600.0	0		2294.72500 *
	C AF	153824.0	2266.0	153824.0	2266.0	0		156090.0
REACH 29J - PYRAMID LAKE THRU CASTAIC POWERPLANT								
The Metropolitan Water District of Southern California	Q AF	0	0	1455000.0	15413.9	0	0	1470413.9
	C CFS	769.74562	0	2779.50595	21.29089	152.32884	0	2953.12568
Ventura County Flood Control District	Q AF	0	0	20000.0	211.9	0	0	20211.9
	C CFS	10.58070	0	38.20627	0.29269	2.09387	0	40.59283
Castaic Lake Water Agency	Q AF	0	0	54200.0	574.2	0	0	54774.2
	C CFS	28.67368	0	103.53698	0.79313	5.67438	0	110.00649
TOTALS	Q AF	0	0	1529200.0	16200.0	0	0	1545400.0
	C CFS	809.00000	0	2921.25120	22.37671	160.09709	0	3103.72500
REACH 30 - CASTAIC DAM AND LAKE								
The Metropolitan Water District of Southern California	Q AF	1455000.0	15413.9	1455000.0	15413.9	0		2160.49235 *
	C AF	315162.0	4780.0	315162.0	4780.0	0		319942.0
Ventura County Flood Control District	Q AF	20000.0	211.9	20000.0	211.9	0		29.69749 *
	C AF	2600.0	39.0	2600.0	39.0	0		2639.0
Castaic Lake Water Agency	Q AF	54200.0	574.2	54200.0	574.2	0		80.48020 *
	C AF	9278.0	141.0	9278.0	141.0	0		9419.0
TOTALS	Q AF	1529200.0	16200.0	1529200.0	16200.0	0		2270.67004 *
	C AF	327040.0	4960.0	327040.0	4960.0	0		332000.0

\* CFS CAPACITY FOR CONVEYANCE OF ANNUAL QUANTITIES DELIVERED FROM OR THROUGH THE RESERVOIR, EXCLUDING RESERVOIR LOSSES.



Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
PYRAMID DAM AND LAKE - REACH 29H							
0.95147787			2183.38005 *	0.95147787		Q AF	The Metropolitan Water District of Southern California Ventura County Flood Control District Castaic Lake Water Agency
0.96581459	0.96278381		150754.0	0.96581459	0.96278381 @ C AF	C AF	
0.01307875			30.01213 *	0.01307875		Q AF	
0.00796336	0.00904475		1243.0	0.00796336	0.00904475 @ C AF	C AF	
0.03544338			81.33282 *	0.03544338		Q AF	
0.02622205	0.02817144		4093.0	0.02622205	0.02817144 @ C AF	C AF	
1.00000000			2294.72500 *	1.00000000		Q AF	TOTALS
1.00000000	1.00000000		156090.0	1.00000000	1.00000000 @ C AF	C AF	

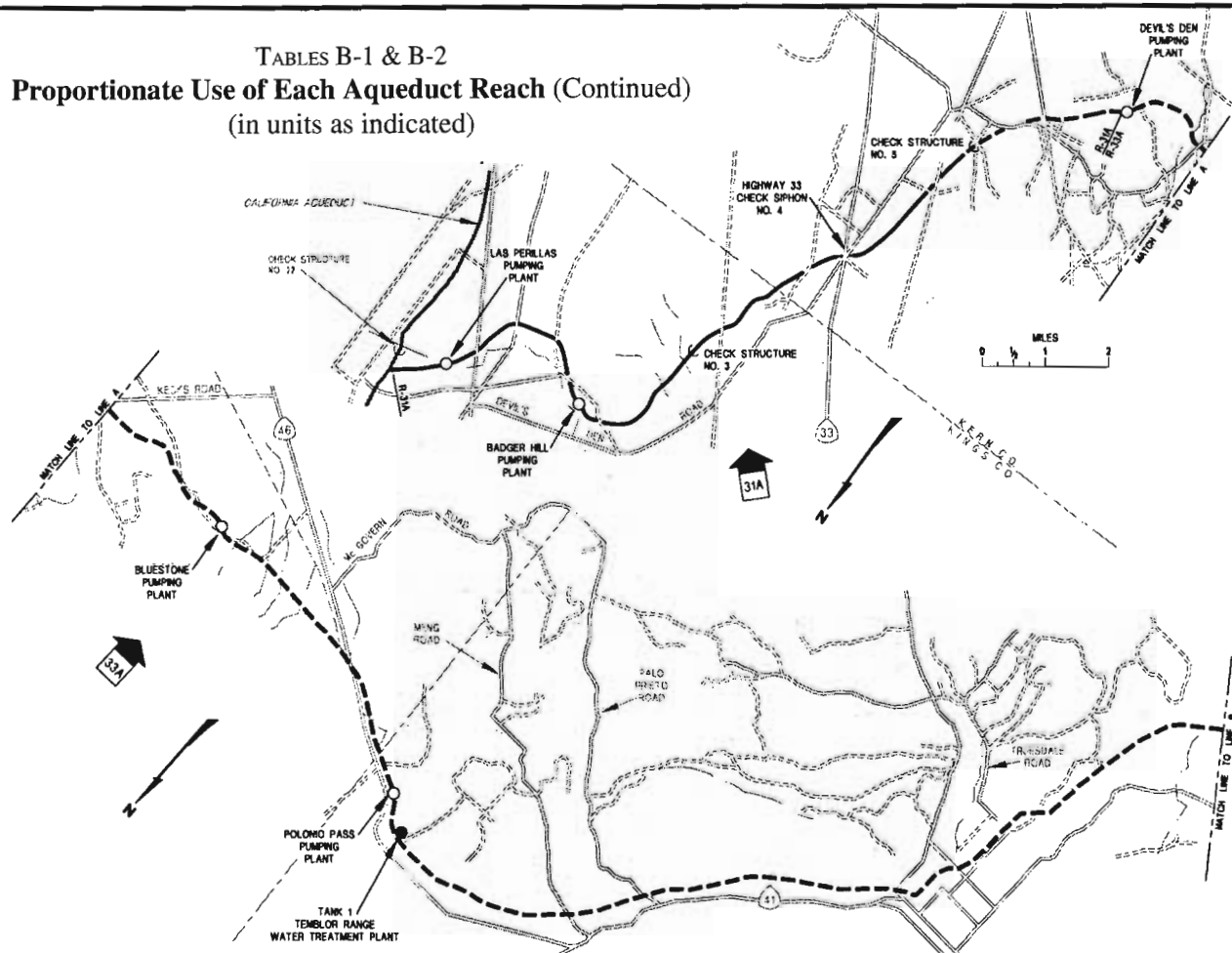
\* CFS CAPACITY FOR CONVEYANCE OF ANNUAL QUANTITIES DELIVERED FROM OR THROUGH THE RESERVOIR, EXCLUDING RESERVOIR LOSSES.  
@ SUMMATION OF QUANTITY RATIO WEIGHTED BY .21139995 AND CAPACITY RATIO WEIGHTED BY .78860005.

PYRAMID LAKE THRU CASTAIC POWERPLANT - REACH 29J							
0.95147787			1470413.9	0.95147787		Q AF	The Metropolitan Water District of Southern California Ventura County Flood Control District Castaic Lake Water Agency
0.95147788	0.95147787	0	2953.12568	0.95147788	0.95147787	C CFS	
0.01307875			20211.9	0.01307875		Q AF	
0.01307875	0.01307875	0	40.59283	0.01307875	0.01307875	C CFS	
0.03544338			54774.2	0.03544338		Q AF	
0.03544337	0.03544338	0	110.00649	0.03544337	0.03544338	C CFS	
1.00000000			1545400.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	3103.72500	1.00000000	1.00000000	C CFS	

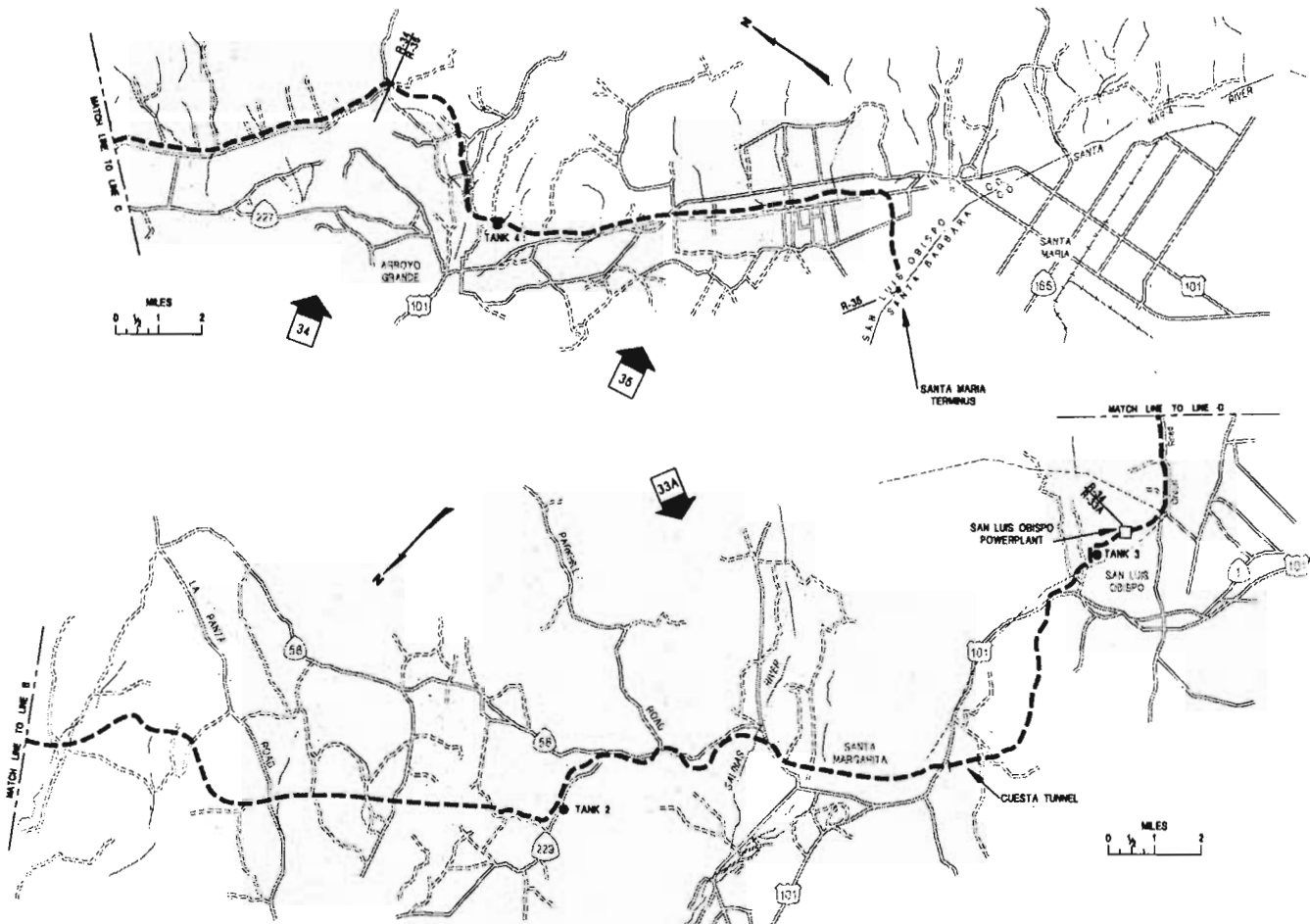
CASTAIC DAM AND LAKE - REACH 30							
0.95147790			2160.49235 *	0.95147790		Q AF	The Metropolitan Water District of Southern California Ventura County Flood Control District Castaic Lake Water Agency
0.96368072	0.96212388		319942.0	0.96368072	0.96212388 @ C AF	C AF	
0.01307873			29.69749 *	0.01307873		Q AF	
0.00794880	0.00860328		2639.0	0.00794880	0.00860328 @ C AF	C AF	
0.03544337			80.48020 *	0.03544337		Q AF	
0.02837048	0.02927284		9419.0	0.02837048	0.02927284 @ C AF	C AF	
1.00000000			2270.67004 *	1.00000000		Q AF	TOTALS
1.00000000	1.00000000		332000.0	1.00000000	1.00000000 @ C AF	C AF	

\* CFS CAPACITY FOR CONVEYANCE OF ANNUAL QUANTITIES DELIVERED FROM OR THROUGH THE RESERVOIR, EXCLUDING RESERVOIR LOSSES.  
@ SUMMATION OF QUANTITY RATIO WEIGHTED BY .12758072 AND CAPACITY RATIO WEIGHTED BY .87241928.

TABLES B-1 & B-2  
Proportionate Use of Each Aqueduct Reach (Continued)  
(in units as indicated)



Water Supply Contractor	Measure of Use	Maximum Annual Entitlements Delivered from Reach	Estimated Operational Losses Within Reach	Capacity Provided in Reach				Subtotal
				For Delivery of Entitlements	For Compensation Of Operational Losses	Scheduled Outages	Downstream Regulation	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
<b>REACH 31A - AVENAL GAP TO DEVIL'S DEN PUMPING PLANT</b>								
Kern County Water Agency (Agriculture)	Q AF	105100.0	725.9	105100.0	725.9	0	0	105825.9
	C CFS	283.00000	1.19478	283.00000	1.19478	0	0	284.19478
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	325.5	45486.0	1975.8	0	0	47461.8
	C CFS	0	0.53575	62.82884	2.93540	4.83610	0	70.60034
San Luis Obispo County Flood Control and Water Conservation District	Q AF	0	176.5	25000.0	726.2	0	0	25726.2
	C CFS	0	0.29051	34.53197	1.11493	2.62135	0	38.26825
Future Contractor - San Joaquin Valley	Q AF	12214.0	84.4	12214.0	84.4	0	0	12298.4
	C CFS	16.87094	0.13892	16.87094	0.13892	1.26532	0	18.27518
<b>TOTALS</b>	Q AF	130014.0	1400.0	200500.0	3600.0	0	0	204100.0
	C CFS	337.76217	2.30430	435.12298	5.52837	8.72277	0	449.37413
<b>REACH 33A - DEVIL'S DEN PUMPING PLANT THRU SAN LUIS OBISPO POWERPLANT</b>								
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	453.9	45486.0	1650.3	0	0	47136.3
	C CFS	0	0.74709	62.82884	2.39965	4.83610	0	70.06459
San Luis Obispo County Flood Control and Water Conservation District	Q AF	10000.0	246.1	25000.0	549.7	0	0	25549.7
	C CFS	13.81279	0.40506	34.53197	0.82442	2.62135	0	37.97774
<b>TOTALS</b>	Q AF	10000.0	700.0	70486.0	2200.0	0	0	72686.0
	C CFS	13.81279	1.15215	97.36081	3.22407	7.45745	0	108.04233
<b>REACH 34 - SAN LUIS OBISPO POWERPLANT TO ARROYO GRANDE</b>								
Santa Barbara County Flood Control and Water Conservation District	Q AF	0	376.6	45486.0	1196.4	0	0	46682.4
	C CFS	0	0.52019	62.82884	1.65256	4.83610	0	69.31750
San Luis Obispo County Flood Control and Water Conservation District	Q AF	5000.0	123.4	15000.0	303.6	0	0	15303.6
	C CFS	6.90639	0.17045	20.71918	0.41936	1.58539	0	22.72393
<b>TOTALS</b>	Q AF	5000.0	500.0	60486.0	1500.0	0	0	61986.0
	C CFS	6.90639	0.69064	83.54802	2.07192	6.42149	0	92.04143
<b>REACH 35 - ARROYO GRANDE THRU SANTA MARIA TERMINUS</b>								
Santa Barbara County Flood Control and Water Conservation District	Q AF	45486.0	819.8	45486.0	819.8	0	0	46305.8
	C CFS	62.82884	1.13237	62.82884	1.13237	4.79709	0	68.75830
San Luis Obispo County Flood Control and Water Conservation District	Q AF	10000.0	180.2	10000.0	180.2	0	0	10180.2
	C CFS	13.81279	0.24891	13.81279	0.24891	1.05463	0	15.11632
<b>TOTALS</b>	Q AF	55486.0	1000.0	55486.0	1000.0	0	0	56486.0
	C CFS	76.64163	1.38128	76.64163	1.38128	5.85172	0	83.87462



Proportionate Use for Allocation of Capital Costs		Capacity Provided in Reach		Proportionate Use for Allocation of Minimum OMP&R Costs		Measure of Use	Water Supply Contractor
Ratios of Total Reach Use	Average of Ratios	For Requested Excess Peaking	Total for Water Supply Contractors	Ratios of Total Reach Use	Average of Ratios		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
0.51850024			105825.9	0.51850024		Q AF	AVENAL GAP TO DEVIL'S DEN PUMPING PLANT - REACH 31A
0.63242355	0.57546190	0	284.19478	0.63242355	0.57546190	C CFS	Kern County Water Agency (Agriculture)
0.23254189			47461.8	0.23254189		Q AF	Santa Barbara County Flood Control and Water Conservation District
0.15710816	0.19482503	0	70.60034	0.15710816	0.19482503	C CFS	San Luis Obispo County Flood Control and Water Conservation District
0.12604704			25726.2	0.12604704		Q AF	San Luis Obispo County Flood Control and Water Conservation District
0.08515899	0.10560301	0	38.25825	0.08515899	0.10560301	C CFS	Future Contractor - San Joaquin Valley
0.06025674			12298.4	0.06025674		Q AF	
0.04066807	0.05046240	0	18.27518	0.04066807	0.05046240	C CFS	
1.00000000			204100.0	1.00000000			TOTALS
1.00000000	1.00000000	0	449.37413	1.00000000	1.00000000		
DEVIL'S DEN PUMPING PLANT THRU SAN LUIS OBISPO POWERPLANT - REACH 33A							
0.64849214			47136.3	0.64849214		Q AF	Santa Barbara County Flood Control and Water Conservation District
0.64849203	0.64849209	0	70.06459	0.64849203	0.64849209	C CFS	San Luis Obispo County Flood Control and Water Conservation District
0.35150786			25549.7	0.35150786		Q AF	
0.35150797	0.35150791	0	37.97774	0.35150797	0.35150791	C CFS	
1.00000000			72686.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	108.04233	1.00000000	1.00000000	C CFS	
SAN LUIS OBISPO POWERPLANT TO ARROYO GRANDE - REACH 34							
0.75311199			46682.4	0.75311199		Q AF	Santa Barbara County Flood Control and Water Conservation District
0.75311197	0.75311198	0	69.31750	0.75311197	0.75311198	C CFS	San Luis Obispo County Flood Control and Water Conservation District
0.24688801			15303.6	0.24688801		Q AF	
0.24688803	0.24688802	0	22.72393	0.24688803	0.24688802	C CFS	
1.00000000			61986.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	92.04143	1.00000000	1.00000000	C CFS	
ARROYO GRANDE THRU SANTA MARIA TERMINUS - REACH 35							
0.81977481			46305.8	0.81977481		Q AF	Santa Barbara County Flood Control and Water Conservation District
0.81977476	0.81977479	0	68.75830	0.81977476	0.81977479	C CFS	San Luis Obispo County Flood Control and Water Conservation District
0.18022519			10180.2	0.18022519		Q AF	
0.18022524	0.18022521	0	15.11632	0.18022524	0.18022521	C CFS	
1.00000000			56486.0	1.00000000		Q AF	TOTALS
1.00000000	1.00000000	0	83.87462	1.00000000	1.00000000	C CFS	

TABLE B-3  
Power Costs and Credits and Annual Replacement Deposits for Each  
Aqueduct Pumping and Power Recovery Plant

(in dollars)

Sheet 1 of 2

Calendar Year	NORTH BAY AQUEDUCT			SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT						
	Reach 1	Reach 3A	Reach 3B	Reach 1 (b)	Reach 1	Reach 4	Reach 14A	Reach 15A	Reach 16A	Reach 17E	
	Barker Slough Pumping P.	Cordella Pumping P. Solano	Cordella Pumping P. Napa (a)	South Bay & Del Valle Pumping P.	Banks Pumping P.	Dos Amigos Pumping P.	Buena Vista Pumping P.	Wheeler Ridge Pumping P.	Chrisman Pumping P.	Edmonston Pumping P.	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	
1961	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	38,130	0	0	0	0	0	0	0
1963	0	0	0	58,871	0	0	0	0	0	0	0
1964	0	0	0	75,239	0	0	0	0	0	0	0
1965	0	0	0	146,297	0	0	0	0	0	0	0
1966	0	0	0	198,643	0	0	0	0	0	0	0
1967	0	0	0	229,629	26,982	0	0	0	0	0	0
1968	0	0	7,128	342,761	1,324,777	239,506	0	0	0	0	0
1969	0	0	8,557	279,751	855,304	143,403	0	0	0	0	0
1970	0	0	13,666	448,383	368,508	217,820	2,940	0	0	0	0
1971	0	0	10,626	422,057	597,946	229,308	156,540	23,021	18,577	29,067	
1972	0	0	14,430	623,564	1,110,833	575,291	348,668	187,825	385,935	1,263,087	
1973	0	0	14,453	485,534	918,234	493,776	511,904	514,487	883,725	3,139,297	
1974	0	0	17,508	510,873	997,269	560,461	556,968	595,585	1,048,196	3,700,573	
1975	0	0	14,801	382,106	1,353,916	561,089	650,781	707,038	1,394,918	4,853,538	
1976	0	0	20,867	589,007	916,728	596,426	701,061	687,677	1,414,902	4,917,776	
1977	0	0	22,640	541,803	653,304	191,906	170,689	173,496	337,890	1,130,422	
1978	0	0	21,670	568,381	3,871,011	723,988	1,009,556	968,744	1,782,668	6,281,786	
1979	0	0	16,240	622,517	3,431,278	1,019,021	848,639	830,839	1,666,505	5,741,609	
1980	0	0	19,936	523,445	2,267,876	1,097,085	1,007,198	997,877	2,018,282	6,671,880	
1981	0	0	23,866	630,850	2,537,496	2,001,426	1,396,980	1,395,352	3,013,081	9,900,941	
1982	0	0	12,080	411,857	3,821,911	1,469,486	1,342,169	1,394,369	2,804,202	9,790,297	
1983	0	0	2,666	86,254	1,571,954	427,302	438,513	419,658	755,558	2,270,437	
1984	0	0	4,516	247,330	1,971,820	1,027,553	805,301	755,735	1,461,935	4,511,753	
1985	0	0	10,048	509,181	3,410,009	1,761,321	1,632,726	1,659,827	3,376,870	11,248,459	
1986	0	0	15,394	842,206	7,675,563	2,684,319	2,516,878	2,565,847	5,311,848	18,004,889	
1987	0	0	27,269	890,242	6,005,812	2,596,810	2,269,475	2,300,951	4,538,300	14,882,723	
1988	14,617	17,816	27,234	909,384	6,992,989	2,710,497	2,660,247	2,695,132	5,363,991	17,656,717	
1989	22,437	69,069	14,507	1,286,419	11,786,839	4,366,575	4,421,044	4,484,614	9,453,245	31,805,947	
1990	80,990	104,102	29,042	1,887,055	11,042,249	4,589,918	5,912,596	6,198,971	14,000,572	49,483,015	
1991	42,364	33,063	18,995	778,004	6,708,282	1,191,223	1,995,007	2,419,459	5,236,629	18,613,103	
1992	107,775	96,967	65,170	2,484,185	23,617,235	9,587,639	10,026,565	11,274,639	23,152,892	80,716,084	
1993	203,536	117,112	79,572	2,655,975	25,024,389	9,955,917	10,213,420	11,492,326	23,591,068	82,225,081	
1994	138,954	117,524	96,800	3,608,767	32,368,272	13,236,117	14,089,066	15,941,004	33,057,202	115,867,597	
1995	172,091	177,247	105,594	3,759,087	33,204,888	13,689,116	14,648,711	16,588,109	34,437,242	120,768,577	
1996	190,215	134,682	129,118	3,939,325	36,332,438	14,477,794	15,940,141	18,191,318	37,958,119	133,040,835	
1997	214,657	161,028	148,582	4,309,969	40,335,441	15,801,356	17,603,571	20,123,171	42,084,888	147,679,483	
1998	224,992	157,140	158,490	4,337,892	38,520,860	15,862,080	17,651,275	20,173,235	42,187,650	148,038,238	
1999	232,678	161,607	166,631	4,311,625	38,173,358	15,616,838	17,269,456	19,714,007	41,199,605	144,517,530	
2000	253,303	175,041	184,052	4,517,119	39,803,288	16,515,652	18,432,953	21,073,219	44,108,242	154,840,397	
2001	259,188	179,990	192,776	4,526,540	40,074,482	16,591,195	18,548,018	21,210,301	44,403,109	155,890,381	
2002	267,000	186,470	203,162	4,567,588	40,335,441	16,666,004	18,594,367	21,255,771	44,494,345	156,201,739	
2003	275,892	193,728	214,297	4,625,094	41,003,119	16,852,721	18,804,469	21,495,370	45,002,491	157,999,828	
2004	288,489	203,751	228,520	4,737,446	41,856,875	17,350,879	19,453,728	22,253,197	46,624,108	163,755,787	
2005	313,848	222,751	253,229	5,051,641	44,285,535	18,458,744	20,761,602	23,756,132	49,825,019	175,089,373	
2006	317,129	222,415	261,464	5,044,038	44,579,232	18,468,298	20,793,562	23,796,408	49,915,345	175,415,934	
2007	322,124	223,361	271,352	5,065,477	44,434,865	18,506,599	20,817,985	23,820,375	49,961,330	175,576,062	
2008	328,445	224,982	282,096	5,102,230	44,949,424	18,658,577	21,010,801	24,044,588	50,442,952	177,281,023	
2009	335,196	226,981	293,587	5,147,584	45,556,186	18,840,127	21,238,204	24,307,882	51,005,090	179,273,607	
2010	343,143	229,609	306,199	5,207,186	45,826,357	19,073,628	21,527,249	24,643,200	51,721,574	181,815,442	
2011	348,625	230,166	317,896	5,219,818	46,062,305	19,157,352	21,649,918	24,789,620	52,034,791	182,930,116	
2012	354,852	231,194	330,383	5,243,131	46,156,721	19,234,551	21,737,208	24,889,791	52,247,959	183,682,733	
2013	375,064	241,017	356,291	5,465,906	48,552,724	19,950,338	22,539,051	25,802,208	54,185,362	190,533,431	
2014	385,336	244,531	373,597	5,545,597	48,554,335	20,337,196	23,059,529	26,412,923	55,493,764	195,184,948	
2015	390,265	244,356	385,836	5,541,602	48,417,099	20,325,855	23,046,533	26,398,218	55,464,297	195,078,398	
2016	394,463	244,233	397,538	5,538,842	48,528,560	20,248,125	22,913,903	26,236,402	55,109,451	193,806,781	
2017	411,670	251,995	423,070	5,714,848	50,035,276	20,905,464	23,713,736	27,160,017	57,079,508	200,787,268	
2018	415,272	251,431	435,413	5,702,071	49,971,398	20,867,835	23,673,618	27,114,767	56,983,908	200,449,206	
2019	420,256	251,582	449,459	5,705,511	50,072,439	20,885,013	23,697,079	27,142,224	57,042,977	200,659,247	
2020	418,980	248,147	457,122	5,627,594	49,468,428	20,628,484	23,404,351	26,808,292	56,332,960	198,147,625	
2021	419,513	246,300	457,953	5,631,065	49,593,853	20,676,165	23,481,981	26,902,001	56,535,379	198,869,132	
2022	419,078	248,003	457,816	5,624,308	49,807,331	20,608,531	23,375,816	26,774,467	56,260,345	197,889,276	
2023	419,850	248,296	458,770	5,630,974	49,518,022	20,671,705	23,474,313	26,892,634	56,515,185	198,797,133	
2024	418,624	247,571	457,979	5,614,535	48,944,854	20,615,647	23,408,829	26,817,473	56,355,544	198,231,873	
2025	419,717	248,136	459,436	5,627,347	49,516,146	20,649,555	23,442,563	26,854,983	56,434,307	198,509,492	
2026	419,794	248,182	459,521	5,628,389	49,579,622	20,655,869	23,451,577	26,865,641	56,457,067	198,590,612	
2027	419,323	247,904	459,006	5,622,074	49,358,963	20,627,584	23,414,579	26,822,486	56,364,565	198,262,272	
2028	419,996	248,301	459,742	5,631,096	49,582,314	20,686,542	23,500,275	26,924,366	56,583,906	199,042,596	
2029	419,381	247,938	459,068	5,622,842	49,448,136	20,618,982	23,397,592	26,801,467	56,319,116	198,099,502	
2030	420,130	248,380	459,889	5,632,888	49,626,078	20,692,639	23,507,645	26,932,600	56,601,485	199,104,728	
2031	419,824	248,200	459,554	5,628,783	49,484,733	20,670,762	23,477,285	26,896,961	56,524,976	198,832,577	
2032	419,393	247,945	459,082	5,623,007	49,385,021	20,629,309	23,415,652	26,823,480	56,366,557	198,268,898	
2033	420,357	248,515	460,137	5,635,931	49,848,701	20,689,228	23,495,088	26,916,412	56,565,874	198,976,685	
2034	419,627	248,083	459,338	5,626,147	49,544,813	20,669,205	23,480,093	26,901,112	56,534,437	198,867,352	
2035	417,785	246,994	457,322	5,601,447	49,451,051	20,296,668	22,868,446	26,162,359	54,938,442	193,175,728	
TOTAL	15,156,238	9,785,836	14,840,050	238,250,294	2,049,762,965	847,683,347	949,407,683	1,082,173,640	2,268,772,262	7,966,666,903	

a) Power costs for the period 1968 through 1987 are for an interim facility.

b) The costs of Del Valle Pumping Plant are combined with those of South Bay Pumping Plant to simplify the cost allocations.

**TABLE B-3**  
**Power Costs and Credits and Annual Replacement Deposits for Each**  
**Aqueduct Pumping and Power Recovery Plant (Continued)**

(in dollars)

Sheet 2 of 2

Calendar Year	CALIFORNIA AQUEDUCT (continued)										GRAND TOTAL
	Reach 18A	Reach 22B	Reach 23	Reach 26A	Reach 29A	Reach 29G	Reach 29J	Reach 31A	Reach 33A		
	Alamo Powerplant	Pearblossom Pumping Plant	Mojave Siphon Powerplant	Devil Canyon Powerplant	Oso Pumping Plant	Warne Powerplant	Castaic Powerplant	Las Perillas and Badger Hill Pumping Plants	Devil's Den, Bluestone and Polonio PP's and San Luis Obispo Pwp.		
[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]		
1961	0	0	0	0	0	0	0	0	0	0	
1962	0	0	0	0	0	0	0	0	0	38,130	
1963	0	0	0	0	0	0	0	0	0	58,871	
1964	0	0	0	0	0	0	0	0	0	75,239	
1965	0	0	0	0	0	0	0	0	0	146,297	
1966	0	0	0	0	0	0	0	0	0	198,643	
1967	0	0	0	0	0	0	0	6,517	0	263,128	
1968	0	0	0	0	0	0	0	120,278	0	2,034,449	
1969	0	0	0	0	0	0	0	79,620	0	1,366,635	
1970	0	0	0	0	0	0	0	137,449	0	1,188,766	
1971	0	64,807	0	0	1,696	0	0	171,389	0	1,725,032	
1972	0	103,584	0	(3,112)	180,005	0	(385,696)	240,651	0	4,645,065	
1973	0	615,309	0	(931,697)	274,450	0	(1,193,218)	128,730	0	5,854,986	
1974	0	595,646	0	(939,072)	322,440	0	(1,823,397)	129,345	0	6,272,395	
1975	0	616,327	0	(1,101,445)	457,487	0	(2,835,302)	101,109	0	7,156,363	
1976	0	914,440	0	(1,520,412)	314,669	0	(2,512,021)	151,211	0	7,192,331	
1977	0	318,880	0	(1,216,060)	53,119	0	(1,701,284)	85,538	0	762,343	
1978	0	1,801,373	0	(3,298,247)	251,373	0	(2,361,377)	197,217	0	11,818,144	
1979	0	1,813,744	0	(3,335,069)	157,934	0	(2,749,296)	209,088	0	10,273,049	
1980	0	1,866,161	0	(3,508,195)	170,688	0	(2,721,871)	182,996	0	10,593,358	
1981	0	2,201,485	0	(2,412,307)	515,450	0	(4,065,927)	187,001	0	17,325,694	
1982	0	1,686,830	0	(3,564,273)	625,856	(972,781)	(3,478,126)	182,271	0	15,528,148	
1983	0	360,441	0	(5,796,266)	234,922	(1,387,177)	(3,997,730)	(10,064)	0	(4,623,532)	
1984	0	555,171	0	(7,768,115)	508,003	(2,299,250)	3,796,036	103,552	0	5,681,340	
1985	0	1,266,518	0	(10,516,348)	1,091,612	(8,517,062)	(16,562,168)	160,898	0	(9,468,109)	
1986	(1,061,528)	2,537,593	0	(12,055,166)	1,348,148	(6,331,000)	(11,562,523)	311,378	0	12,803,846	
1987	(977,071)	1,845,566	0	(10,289,899)	1,394,844	(6,691,232)	(11,630,604)	274,220	0	7,437,606	
1988	(767,622)	2,512,755	0	(14,654,108)	1,511,119	(7,360,406)	(12,678,483)	236,321	0	7,850,200	
1989	(780,646)	4,624,072	0	(18,335,362)	2,295,065	(8,775,472)	(15,602,301)	315,974	0	31,402,026	
1990	(840,987)	6,679,048	0	(21,031,224)	2,960,025	(11,218,094)	(20,498,846)	430,125	0	49,808,557	
1991	(688,000)	2,911,085	0	(14,235,000)	1,055,252	(6,765,000)	(11,767,500)	7,300	0	7,554,266	
1992	(1,188,424)	12,235,749	0	(25,549,724)	5,068,723	(13,220,530)	(22,472,500)	575,095	0	116,577,540	
1993	(1,269,046)	12,775,883	0	(27,092,460)	5,042,788	(12,956,307)	(22,265,000)	585,182	0	120,379,490	
1994	(4,749,086)	17,547,152	(4,132,308)	(28,858,560)	7,082,987	(15,772,032)	(24,484,300)	759,381	0	175,914,537	
1995	(4,273,166)	18,078,532	(7,414,358)	(28,950,535)	7,432,166	(16,151,457)	(25,175,350)	783,526	6,416	181,886,438	
1996	(4,735,286)	21,023,414	(8,290,262)	(32,709,560)	7,655,373	(18,114,157)	(25,186,200)	1,356,917	2,487,798	205,822,022	
1997	(4,796,206)	22,533,244	(8,848,114)	(32,633,735)	8,752,913	(17,170,932)	(26,866,300)	1,468,629	2,774,982	232,421,094	
1998	(4,959,686)	23,480,795	(9,057,014)	(32,695,610)	8,384,631	(16,378,532)	(25,500,200)	1,478,143	2,799,441	234,863,820	
1999	(4,777,006)	22,326,835	(8,429,412)	(32,749,185)	8,382,103	(16,454,657)	(25,634,050)	1,469,193	2,776,434	228,273,590	
2000	(5,006,606)	24,460,221	(9,328,982)	(33,020,960)	8,724,434	(16,417,782)	(25,534,700)	1,539,215	2,956,443	248,274,549	
2001	(5,024,366)	24,598,382	(8,679,472)	(33,213,735)	8,765,209	(16,443,332)	(25,597,400)	1,542,426	2,964,696	250,588,388	
2002	(4,980,366)	24,504,936	(8,641,972)	(33,231,335)	8,798,837	(16,371,632)	(25,465,550)	1,556,413	3,000,654	251,941,872	
2003	(4,906,966)	24,589,625	(8,438,584)	(33,248,835)	8,940,001	(16,435,207)	(25,570,400)	1,576,009	3,051,027	256,023,679	
2004	(5,048,126)	25,684,891	(9,083,008)	(33,263,310)	9,151,582	(16,443,707)	(25,586,250)	1,614,292	3,149,448	266,927,592	
2005	(5,078,166)	27,450,653	(9,421,522)	(33,239,460)	9,726,578	(16,467,057)	(25,596,950)	1,721,355	3,424,680	290,539,985	
2006	(5,092,766)	27,536,072	(8,959,280)	(33,529,660)	9,734,864	(16,491,732)	(25,652,600)	1,718,763	3,418,017	291,495,503	
2007	(5,103,048)	27,666,789	(9,203,100)	(33,563,485)	9,697,011	(16,389,457)	(25,439,850)	1,726,070	3,436,800	291,827,262	
2008	(5,095,406)	27,854,572	(9,148,804)	(33,677,210)	9,822,252	(16,466,982)	(25,595,400)	1,738,593	3,468,993	295,227,728	
2009	(5,127,566)	28,286,271	(9,377,244)	(33,741,585)	9,883,421	(16,442,907)	(25,535,300)	1,754,407	3,508,722	299,432,303	
2010	(5,146,126)	28,771,812	(9,194,976)	(33,921,210)	9,967,466	(16,415,857)	(25,519,150)	1,774,357	3,560,934	304,590,837	
2011	(5,159,006)	29,012,536	(9,067,148)	(34,082,310)	10,025,492	(16,418,407)	(25,556,250)	1,778,662	3,572,001	306,848,177	
2012	(5,169,766)	29,144,766	(8,668,514)	(34,313,985)	10,059,198	(16,409,882)	(25,534,600)	1,786,605	3,592,422	308,594,767	
2013	(5,110,846)	30,107,457	(8,561,102)	(34,435,560)	10,458,920	(16,402,732)	(25,525,800)	1,862,516	3,787,569	324,181,814	
2014	(5,220,286)	31,115,833	(8,912,432)	(34,474,535)	10,609,030	(16,416,257)	(25,541,700)	1,889,671	3,857,379	332,498,459	
2015	(5,201,406)	31,077,390	(9,428,794)	(34,384,685)	10,612,178	(16,457,332)	(25,571,350)	1,888,310	3,853,878	331,680,648	
2016	(5,147,406)	30,750,996	(9,223,542)	(34,474,385)	10,598,022	(16,422,607)	(25,545,150)	1,887,369	3,851,460	329,692,055	
2017	(5,182,328)	31,949,207	(9,268,806)	(34,562,160)	10,934,198	(16,474,232)	(25,592,250)	1,947,344	4,005,639	344,239,466	
2018	(5,194,206)	31,972,643	(9,480,940)	(34,572,235)	10,886,407	(16,439,032)	(25,532,050)	1,942,990	3,994,446	343,442,942	
2019	(5,210,486)	32,016,286	(9,501,768)	(34,592,335)	10,894,055	(16,428,182)	(25,533,600)	1,944,162	3,997,461	343,911,380	
2020	(5,206,126)	31,628,908	(9,650,188)	(34,541,360)	10,759,402	(16,454,132)	(25,551,600)	1,917,612	3,929,208	338,373,707	
2021	(5,234,326)	31,819,653	(9,673,312)	(34,614,135)	10,771,041	(16,456,382)	(25,564,450)	1,918,794	3,932,247	339,714,472	
2022	(5,193,486)	31,558,775	(9,248,880)	(34,730,435)	10,756,370	(16,452,957)	(25,558,200)	1,916,492	3,926,328	338,438,978	
2023	(5,209,686)	31,789,132	(9,445,762)	(34,750,235)	10,774,450	(16,451,632)	(25,571,450)	1,916,764	3,932,166	339,612,629	
2024	(5,240,766)	31,798,881	(9,040,764)	(34,875,085)	10,705,281	(16,369,782)	(25,470,000)	1,913,162	3,917,766	338,451,522	
2025	(5,190,686)	31,651,060	(8,969,588)	(34,875,160)	10,795,000	(16,477,907)	(26,637,400)	1,917,527	3,928,989	339,303,517	
2026	(5,203,806)	31,749,625	(9,068,644)	(34,863,910)	10,765,405	(16,429,957)	(25,558,700)	1,917,883	3,929,901	339,594,071	
2027	(5,214,966)	31,749,772	(9,105,708)	(34,872,510)	10,726,602	(16,380,707)	(25,489,250)	1,915,731	3,924,372	338,852,092	
2028	(5,217,726)	31,818,990	(9,082,830)	(34,905,985)	10,792,637	(16,464,407)	(25,614,500)	1,918,805	3,932,274	340,256,392	
2029	(5,206,966)	31,704,516	(9,073,892)	(34,896,360)	10,724,457	(16,375,007)	(25,480,300)	1,915,993	3,925,044	338,671,509	
2030	(5,215,846)	31,828,996	(9,114,892)	(34,900,760)	10,795,888	(16,463,082)	(25,614,150)	1,919,416	3,933,843	340,395,875	
2031	(5,216,966)	31,830,147	(9,090,128)	(34,921,310)	10,762,859	(16,434,757)	(25,552,100)	1,918,017	3,930,249	339,869,666	
2032	(5,208,886)	31,717,018	(9,077,910)	(34,904,435)	10,740,223	(16,400,257)	(25,519,300)	1,916,048	3,925,188	338,826,013	
2033	(5,236,886)	31,815,300	(9,261,836)	(34,905,685)	10,784,839	(16,439,432)	(25,573,200)	1,920,452	3,936,510	340,296,970	
2034	(5,266,766)	31,873,219	(9,307,100)	(34,894,185)	10,750,707	(16,409,157)	(25,531,650)	1,917,119	3,927,939	339,810,333	
2035	(5,271,926)	32,160,573	(9,866,668)	(34,757,885)	9,944,132	(15,135,707)	(23,601,300)	1,908,702	3,906,300	332,902,463	
TOTAL	(221,602,816)	1,262,938,342	(376,037,560)	(1,612,552,956)	443,184,289	(774,783,655)	(1,241,825,382)	78,475,866	144,136,066	13,144,431,412	



TABLE B-4  
Annual Entitlements to Project Water

(in acre-feet)

Sheet 1 of 4

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA (a)				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County WA	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	507	5,248	5,783	11,538	0	0	0
1968	0	0	0	6,900	15,000	88,000	109,900	0	0	0
1969	0	0	0	8,200	15,500	75,000	98,700	0	0	0
1970	0	0	0	10,000	16,200	88,000	114,200	0	0	0
1971	0	0	0	11,200	17,000	88,000	116,200	0	0	0
1972	0	0	0	12,400	17,900	88,000	118,300	0	0	0
1973	0	0	0	13,600	18,800	88,000	120,400	0	0	0
1974	0	0	0	14,800	19,600	88,000	122,400	0	0	0
1975	0	0	0	16,000	20,500	88,000	124,500	0	0	0
1976	0	0	0	17,200	21,300	88,000	126,500	0	0	0
1977	0	0	0	18,400	22,200	88,000	128,600	0	0	0
1978	0	0	0	19,600	23,100	88,000	130,700	0	0	0
1979	0	0	0	20,800	23,900	88,000	132,700	0	0	0
1980	0	500	500	22,000	24,800	88,000	134,800	1,000	946	1,946
1981	0	650	650	23,000	26,000	88,000	137,000	1,000	1,813	2,813
1982	0	800	800	24,000	27,200	88,000	139,200	2,000	5,626	5,626
1983	0	950	950	25,000	28,400	88,000	141,400	3,000	5,439	8,439
1984	0	1,100	1,100	26,000	29,600	88,000	143,600	4,500	8,198	12,698
1985	0	1,250	1,250	27,000	30,800	88,000	145,800	7,500	13,638	21,138
1986	0	1,400	1,400	28,000	32,100	88,000	148,100	10,000	18,210	28,210
1987	0	1,550	1,550	29,000	33,300	88,000	150,300	12,500	22,704	35,204
1988	5,745	9,726	15,471	30,000	34,500	88,000	152,500	15,500	28,222	43,722
1989	6,195	18,420	24,615	31,000	35,700	90,000	156,700	20,000	36,342	56,342
1990	6,745	21,250	27,995	32,000	36,900	92,000	160,900	25,000	45,486	70,486
1991	7,290	22,300	29,590	34,000	38,400	94,000	166,400	25,000	45,486	70,486
1992	7,840	24,170	32,010	36,000	39,900	96,000	171,900	25,000	45,486	70,486
1993	8,490	26,130	34,620	38,000	41,400	98,000	177,400	25,000	45,486	70,486
1994	9,135	28,080	37,215	40,000	42,000	100,000	182,000	25,000	45,486	70,486
1995	9,780	34,250	44,030	42,000	42,000	100,000	184,000	25,000	45,486	70,486
1996	10,425	37,800	48,225	44,000	42,000	100,000	186,000	25,000	45,486	70,486
1997	11,065	38,250	49,315	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1998	11,710	38,710	50,420	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1999	12,330	39,170	51,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2000	13,050	39,620	52,670	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2001	13,665	40,080	53,745	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2002	14,185	40,540	54,725	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2003	14,800	41,000	55,800	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2004	15,400	41,450	56,850	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2005	16,000	41,500	57,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2006	16,450	41,550	58,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2007	17,000	41,600	58,600	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2008	17,650	41,650	59,300	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2009	18,200	41,700	59,900	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2010	18,750	41,750	60,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2011	19,400	41,800	61,200	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2012	19,950	41,850	61,800	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2013	20,600	41,900	62,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2014	21,250	41,950	63,200	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2015	21,900	42,000	63,900	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2016	22,500	42,000	64,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2017	23,100	42,000	65,100	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2018	23,700	42,000	65,700	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2019	24,300	42,000	66,300	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2020	24,900	42,000	66,900	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2021	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2022	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2023	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2024	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2025	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2026	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2027	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2028	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2029	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2030	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2031	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2032	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2033	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2034	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2035	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
TOTAL	878,500	1,848,396	2,726,896	2,494,607	2,459,248	6,510,783	11,464,638	1,227,000	2,231,494	3,458,494

a) Entitlements for the South Bay area were supplied by non-Project water for the period June 1962 through November 1967. Actual delivery quantities of Project water are shown for 1967.

b) District's Table A quantities exclude amounts during the period 1968 through 1987 that are assumed to be supplied by non-Project water.



TABLE B-4  
Annual Entitlements to Project Water (Continued)

(in acre-feet)

Sheet 2 of 4

Calendar Year	SAN JOAQUIN VALLEY AREA								
	Dudley Ridge Water District	Empire West Side Irrigation District	Kern County Water Agency			County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
			Municipal and Industrial	Agricultural	Total				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	14,300	1,000	0	46,600	46,600	900	2,300	12,250	77,350
1969	14,325	3,000	0	95,700	95,700	1,200	2,500	46,350	163,075
1970	15,700	3,000	28,700	116,400	145,100	1,300	2,600	34,300	202,000
1971	17,900	3,000	35,700	154,600	190,300	1,300	2,800	36,500	251,800
1972	20,000	3,000	39,200	231,500	270,700	1,400	5,366	112,600	413,066
1973	22,000	3,000	43,500	267,000	310,500	1,500	3,100	43,552	383,652
1974	33,390	3,000	48,000	299,000	347,000	1,500	3,471	72,289	460,650
1975	40,555	3,000	52,700	358,120	410,820	1,600	3,576	86,258	545,809
1976	30,921	3,000	56,100	386,050	442,150	1,600	4,039	61,707	543,417
1977	30,400	3,000	60,600	423,000	483,600	1,700	3,700	59,000	581,400
1978	32,500	0	64,100	470,200	534,300	1,900	3,900	63,300	635,900
1979	38,544	3,000	67,600	516,300	583,900	2,000	4,000	71,241	702,685
1980	41,000	3,000	71,100	563,400	634,500	2,200	5,700	71,700	758,100
1981	41,000	3,000	74,800	616,600	691,400	2,300	4,300	76,000	818,000
1982	41,000	3,000	79,600	665,700	745,300	2,500	4,500	80,200	876,500
1983	42,900	3,000	83,500	721,600	805,100	2,800	4,600	9,548	887,948
1984	45,100	3,000	103,600	757,000	860,600	3,100	4,800	62,611	979,211
1985	47,200	3,000	108,900	806,100	915,000	3,400	4,900	45,549	1,019,049
1986	49,300	3,000	113,400	854,800	968,200	3,700	5,100	97,200	1,126,500
1987	51,400	3,000	119,100	904,400	1,023,500	4,000	5,200	101,400	1,186,500
1988	53,500	3,000	123,900	950,700	1,074,600	4,000	5,400	105,600	1,246,100
1989	55,600	3,000	128,200	984,100	1,112,300	4,000	5,600	109,900	1,290,400
1990	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1991	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1992	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1993	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1994	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1995	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1996	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1997	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1998	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1999	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2000	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2001	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2002	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2003	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2004	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2005	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2006	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2007	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2008	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2009	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2010	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2011	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2012	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2013	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2014	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2015	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2016	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2017	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2018	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2019	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2020	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2021	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2022	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2023	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2024	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2025	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2026	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2027	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2028	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2029	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2030	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2031	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2032	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2033	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2034	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
2035	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
TOTAL	3,432,735	199,000	7,693,900	58,053,670	65,747,570	233,900	353,652	6,910,055	76,876,912

TABLE B-4  
Annual Entitlements to Project Water (Continued)

(in acre-feet)

Sheet 3 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley- East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline- Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	3,700	0	0	0	0	0	0	0	0
1969	0	5,000	0	0	0	0	0	0	0	0
1970	0	5,700	0	0	0	0	0	0	0	0
1971	0	6,700	0	0	0	0	0	0	0	0
1972	20,000	8,938	5,200	526	8,000	170	8,400	1,620	1,677	122
1973	25,000	12,400	5,800	870	9,000	290	10,700	2,940	48,000	11,500
1974	30,000	15,400	6,400	1,160	10,000	400	13,100	4,260	50,000	12,300
1975	35,000	18,200	7,000	1,450	11,000	520	15,400	5,580	52,500	13,100
1976	44,000	21,200	7,600	1,740	12,000	640	17,800	6,900	55,000	14,000
1977	50,000	24,100	8,421	2,030	13,000	730	20,200	8,220	57,500	14,800
1978	57,000	24,762	9,242	2,320	14,000	920	0	9,340	60,000	15,700
1979	63,000	28,000	10,063	2,610	15,000	1,040	24,900	10,260	62,500	16,600
1980	69,200	30,400	10,884	2,900	17,000	1,150	27,200	11,180	65,500	17,400
1981	75,000	32,800	12,105	3,190	19,000	1,270	23,100	11,700	68,500	18,300
1982	81,300	34,800	13,326	3,480	21,000	1,380	22,843	12,320	71,500	19,100
1983	87,700	37,300	14,547	3,770	23,000	1,500	34,300	12,940	74,500	19,900
1984	95,000	39,600	15,768	4,060	25,000	1,610	36,700	13,560	78,000	20,700
1985	102,000	41,800	16,989	4,350	27,000	1,730	39,000	14,180	81,500	21,800
1986	109,000	44,000	18,210	4,640	29,000	1,840	41,400	14,800	85,000	23,200
1987	116,000	46,200	19,431	4,930	31,000	1,960	43,700	15,420	89,000	24,600
1988	123,000	48,400	20,652	5,220	33,000	2,070	46,000	16,040	93,000	26,000
1989	130,000	50,600	21,873	5,510	35,000	2,190	48,300	16,660	97,000	27,400
1990	137,000	52,800	23,100	5,800	37,000	2,300	50,600	17,300	101,500	28,800
1991	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1992	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1993	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1994	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1995	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1996	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1997	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1998	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1999	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2000	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2001	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2002	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2003	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2004	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2005	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2006	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2007	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2008	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2009	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2010	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2011	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2012	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2013	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2014	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2015	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2016	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2017	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2018	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2019	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2020	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2021	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2022	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2023	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2024	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2025	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2026	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2027	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2028	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2029	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2030	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2031	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2032	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2033	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2034	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2035	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
TOTAL	7,330,000	3,069,098	1,286,111	321,556	2,107,600	127,210	2,810,043	983,720	5,909,177	1,641,322

Note: As of January 1, 1992, Castaic Lake Water Agency will assume all rights and obligations granted to Devil's Den Water District according to its long-term water supply contract with the state of California.

TABLE B-4  
Annual Entitlements to Project Water (Continued)

(in acre-feet)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Geronio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	11,538
1968	0	0	0	3,700	0	300	250	550	0	191,500
1969	0	0	0	5,000	0	350	270	620	0	267,395
1970	0	0	0	5,700	0	400	300	700	0	322,600
1971	0	0	0	6,700	0	450	440	890	0	375,590
1972	0	154,772	0	209,423	0	500	470	970	0	741,759
1973	0	354,600	0	481,100	0	600	500	1,100	0	986,252
1974	0	454,900	0	597,920	0	700	530	1,230	0	1,182,200
1975	0	555,200	0	714,950	0	1,050	560	1,610	0	1,386,869
1976	0	655,600	0	836,480	0	1,400	590	1,990	0	1,508,387
1977	0	755,900	0	954,901	0	1,800	620	2,420	0	1,667,321
1978	0	856,300	0	1,049,584	0	1,200	650	1,850	0	1,818,034
1979	0	956,600	0	1,190,573	0	1,450	680	2,130	0	2,028,088
1980	6,800	1,057,000	1,000	1,317,614	0	1,100	710	1,810	0	2,214,770
1981	7,800	1,157,300	2,000	1,432,065	0	1,200	740	1,940	0	2,392,468
1982	8,800	1,257,600	3,000	1,550,449	0	1,200	770	1,970	0	2,574,545
1983	9,800	1,358,000	4,000	1,681,257	0	1,200	800	2,000	0	2,701,994
1984	10,800	1,458,300	5,000	1,744,098	1,600	1,200	830	3,630	0	2,884,337
1985	11,800	1,558,700	6,000	1,864,849	1,700	1,200	860	3,760	0	3,055,846
1986	12,900	1,659,300	8,000	1,983,890	2,100	1,200	890	4,190	0	3,292,290
1987	14,000	1,759,800	10,000	2,103,941	2,500	1,200	920	4,620	0	3,484,115
1988	15,100	1,860,400	13,000	2,225,482	2,900	1,200	960	5,060	0	3,688,335
1989	16,200	1,961,000	16,000	2,424,833	3,300	1,200	1,000	5,500	0	3,958,190
1990	17,300	2,011,500	20,000	2,500,600	3,800	1,200	1,040	6,040	0	4,108,321
1991	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,080	11,880	0	4,130,856
1992	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,120	11,920	0	4,138,816
1993	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,160	11,960	0	4,146,966
1994	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,200	12,000	0	4,154,201
1995	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,250	12,050	0	4,163,066
1996	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,300	12,100	0	4,169,311
1997	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,350	12,150	0	4,172,451
1998	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,400	12,200	0	4,173,606
1999	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,450	12,250	0	4,174,736
2000	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,510	12,310	0	4,175,966
2001	17,300	2,011,500	20,000	2,510,200	9,600	27,500	1,570	38,670	0	4,203,401
2002	17,300	2,011,500	20,000	2,510,200	9,600	27,500	1,630	38,730	0	4,204,441
2003	17,300	2,011,500	20,000	2,510,200	9,600	27,500	1,690	38,790	0	4,205,576
2004	17,300	2,011,500	20,000	2,510,200	9,600	27,500	1,750	38,850	0	4,206,686
2005	17,300	2,011,500	20,000	2,510,200	9,600	27,500	1,810	38,910	0	4,207,396
2006	17,300	2,011,500	20,000	2,510,200	9,600	27,500	1,880	38,980	0	4,207,966
2007	17,300	2,011,500	20,000	2,510,200	9,600	27,500	1,950	39,050	0	4,208,636
2008	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,020	39,120	0	4,209,406
2009	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,090	39,190	0	4,210,076
2010	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,160	39,260	0	4,210,746
2011	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,240	39,340	0	4,211,526
2012	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,320	39,420	0	4,212,206
2013	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,410	39,510	0	4,212,996
2014	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,500	39,600	0	4,213,786
2015	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,600	39,700	0	4,214,586
2016	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,215,286
2017	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,215,886
2018	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,216,486
2019	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,086
2020	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,686
2021	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2022	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2023	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2024	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2025	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2026	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2027	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2028	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2029	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2030	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2031	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2032	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2033	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2034	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
2035	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
TOTAL	909,800	112,360,272	988,000	139,843,909	449,900	997,800	112,820	1,560,520	0	235,931,369

TABLE B-5A  
Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor

(in acre-feet) Sheet 1 of 8

Calendar Year	Grizzly Valley Pipeline PC FC&WCD	NORTH BAY AQUEDUCT				SOUTH BAY AQUEDUCT					
		Reach 1	Reach 3A	Reach 3B	Total	Reach 1		Reach 2	Reach 4	Reach 5	
		SCWA	SCWA	NC (a) FC&WCD		ACWD	AC FC&WCD	AC FC&WCD	AC FC&WCD	ACWD	AC FC&WCD
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
1962	0	0	0	0	0	8,412	141	353	0	0	0
1963	0	0	0	0	0	10,914	814	917	0	0	0
1964	0	0	0	0	0	19,238	248	1,425	0	0	0
1965	0	0	0	0	0	15,280	637	1,830	138	0	0
1966	0	0	0	0	0	0	2,475	2,537	499	0	0
1967	0	0	0	0	0	0	1,527	2,391	862	0	0
1968	0	0	0	1,214	1,214	0	1,608	3,799	721	0	5
1969	0	0	0	2,687	2,687	0	1,165	3,459	1,851	0	160
1970	70	0	0	3,618	3,618	0	1,345	4,558	3,182	0	164
1971	64	0	0	2,521	2,521	0	546	1,908	2,403	0	160
1972	505	0	0	3,647	3,647	0	1,066	4,605	2,041	1,489	2,777
1973	679	0	0	3,792	3,792	0	430	1,123	1,193	0	229
1974	648	0	0	4,870	4,870	0	177	0	975	0	162
1975	405	0	0	6,840	6,840	0	137	1,783	1,864	0	120
1976	382	0	0	7,122	7,122	0	265	7,204	3,384	0	817
1977	303	0	0	8,226	8,226	0	210	4,491	2,213	0	524
1978	278	0	0	6,034	6,034	0	422	2,426	3,754	0	2,034
1979	329	0	0	6,561	6,561	0	197	4,283	5,567	0	3,937
1980	295	0	0	6,707	6,707	0	77	3,883	6,686	1,508	0
1981	355	0	0	9,001	9,001	0	1,250	4,648	5,273	5,752	1,157
1982	305	0	0	1,213	1,213	0	473	3,043	4,406	0	630
1983	262	0	0	2,287	2,287	0	179	2,712	1,714	0	50
1984	272	0	0	2,923	2,923	0	165	4,219	2,219	0	55
1985	254	0	0	4,039	4,039	0	213	5,199	2,060	0	63
1986	317	1,400	0	3,519	4,919	0	200	6,052	2,062	0	212
1987	452	1,550	0	7,693	9,243	0	218	7,538	2,372	0	285
1988	523	1	9,725	5,392	15,118	0	222	8,302	4,681	0	189
1989	486	10	17,246	3,819	21,075	0	222	8,051	6,562	0	418
1990	574	3,275	15,173	5,506	23,954	0	256	8,160	8,175	0	722
1991	540	5,004	7,896	3,372	16,272	0	103	3,720	1,176	0	1,176
1992	1,120	7,720	16,450	7,157	31,327	0	203	7,847	4,915	0	2,725
1993	1,160	9,600	16,530	7,776	33,906	0	203	8,257	5,257	0	2,913
1994	1,200	11,150	16,930	8,348	36,426	0	203	8,690	5,486	0	3,139
1995	1,250	12,670	21,580	8,834	43,084	0	203	9,142	5,677	0	3,331
1996	1,300	17,570	17,746	10,414	45,730	0	215	8,250	8,089	0	6,078
1997	1,350	18,240	18,152	11,073	47,465	0	225	8,624	8,457	0	6,354
1998	1,400	18,910	18,558	11,732	49,200	0	225	8,624	8,457	0	6,354
1999	1,450	19,580	18,964	12,391	50,935	0	225	8,624	8,457	0	6,354
2000	1,510	20,250	19,370	13,050	52,670	0	225	8,624	8,457	0	6,354
2001	1,570	20,300	19,696	13,640	53,636	0	225	8,624	8,457	0	6,354
2002	1,630	20,350	20,022	14,230	54,602	0	225	8,624	8,457	0	6,354
2003	1,690	20,400	20,348	14,820	55,568	0	225	8,624	8,457	0	6,354
2004	1,750	20,450	20,674	15,410	56,534	0	225	8,624	8,457	0	6,354
2005	1,810	20,500	21,000	16,000	57,500	0	225	8,624	8,457	0	6,354
2006	1,880	20,550	21,000	16,540	58,090	0	225	8,624	8,457	0	6,354
2007	1,950	20,600	21,000	17,080	58,680	0	225	8,624	8,457	0	6,354
2008	2,020	20,650	21,000	17,620	59,270	0	225	8,624	8,457	0	6,354
2009	2,090	20,700	21,000	18,160	59,860	0	225	8,624	8,457	0	6,354
2010	2,160	20,750	21,000	18,700	60,450	0	225	8,624	8,457	0	6,354
2011	2,240	20,800	21,000	19,340	61,140	0	225	8,624	8,457	0	6,354
2012	2,320	20,850	21,000	19,980	61,830	0	225	8,624	8,457	0	6,354
2013	2,410	20,900	21,000	20,620	62,520	0	225	8,624	8,457	0	6,354
2014	2,500	20,950	21,000	21,260	63,210	0	225	8,624	8,457	0	6,354
2015	2,600	21,000	21,000	21,900	63,900	0	225	8,624	8,457	0	6,354
2016	2,700	21,000	21,000	22,500	64,500	0	225	8,624	8,457	0	6,354
2017	2,700	21,000	21,000	23,100	65,100	0	225	8,624	8,457	0	6,354
2018	2,700	21,000	21,000	23,700	65,700	0	225	8,624	8,457	0	6,354
2019	2,700	21,000	21,000	24,300	66,300	0	225	8,624	8,457	0	6,354
2020	2,700	21,000	21,000	24,900	66,900	0	225	8,624	8,457	0	6,354
2021	2,700	21,000	21,000	24,920	66,920	0	225	8,624	8,457	0	6,354
2022	2,700	21,000	21,000	24,940	66,940	0	225	8,624	8,457	0	6,354
2023	2,700	21,000	21,000	24,960	66,960	0	225	8,624	8,457	0	6,354
2024	2,700	21,000	21,000	24,980	66,980	0	225	8,624	8,457	0	6,354
2025	2,700	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2026	2,700	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2027	2,700	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2028	2,700	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2029	2,700	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2030	2,700	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2031	2,700	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2032	2,700	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2033	2,700	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2034	2,700	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2035	2,700	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
TOTAL	104,658	876,680	946,060	961,976	2,784,716	53,844	26,790	493,141	437,279	8,749	262,038

a) For the period 1968 through 1987, deliveries are non-Project water pumped through an interim facility.

TABLE B-5A

## Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Continued)

Calendar  Year	SOUTH BAY AQUEDUCT (b (continued)					CALIFORNIA AQUEDUCT										Sheet 2 of 8	
						NORTH SAN JOAQUIN DIVISION			SAN LUIS DIVISION								
									Reach 2A			Reach 3	Reach 4				
	Reach 6 AC FC&WCD	Reach 7 ACWD	Reach 8 ACWD	Reach 9 SCVWD	Total	OFWD (c)	TLBWS	SCVWD	DRWD	KCWA(AG)	DRWD	TLBWS	KCWA(AG)				
	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]				
1962	0	0	0	0	8,906	0	0	0	0	0	0	0	0				
1963	0	0	0	0	12,645	0	0	0	0	0	0	0	0				
1964	0	0	0	0	20,911	0	0	0	0	0	0	0	0				
1965	0	1,127	0	15,014	34,026	0	0	0	0	0	0	0	0				
1966	0	14,864	0	34,538	54,913	0	0	0	0	0	0	0	0				
1967	0	12,882	0	39,101	56,763	0	0	0	0	0	0	0	0				
1968	0	24,817	0	70,105	101,055	3,084	0	0	0	0	0	0	0				
1969	0	813	0	62,264	69,712	3,016	0	0	0	0	0	0	0				
1970	0	0	0	80,311	89,560	5,911	0	0	0	0	0	0	0				
1971	0	5,961	0	87,606	98,584	7,212	0	0	0	0	0	0	0				
1972	0	26,182	0	100,266	138,426	8,166	0	0	0	0	0	0	0				
1973	0	2,521	0	88,582	94,078	3,214	0	0	0	0	0	0	0				
1974	0	0	4	88,000	89,318	3,471	0	0	0	0	0	0	0				
1975	714	393	593	88,000	93,604	3,576	0	0	0	0	0	0	0				
1976	5,461	13,774	7,526	88,000	126,431	4,112	0	0	0	0	0	0	0				
1977	5,206	11,284	7,556	76,220	107,704	1,472	0	0	0	0	0	0	0				
1978	2,348	854	5,009	95,727	112,574	3,906	0	0	0	0	0	0	0				
1979	5,341	3,430	7,444	91,991	122,190	6,149	0	0	0	0	0	0	0				
1980	6,144	2,824	6,702	88,000	115,824	5,700	0	0	0	0	0	0	0				
1981	7,262	7,595	8,570	88,000	129,507	4,300	0	0	0	0	0	0	0				
1982	4,571	1,776	4,540	87,261	106,700	3,838	0	0	0	0	0	0	0				
1983	111	0	3,157	86,733	94,656	3,822	0	0	0	0	0	0	0				
1984	126	0	3,338	88,000	98,122	5,700	0	0	0	0	0	0	0				
1985	7,537	11,203	7,813	88,000	122,088	5,433	0	0	0	0	0	0	0				
1986	2,083	5,311	7,068	88,000	110,988	5,107	0	0	0	0	0	0	0				
1987	12,993	15,488	9,902	88,000	136,796	5,625	0	0	0	0	0	0	0				
1988	12,436	24,259	9,205	87,961	147,255	4,412	0	0	0	0	0	0	0				
1989	10,974	17,340	8,702	90,000	142,269	6,091	300	0	602	12,647	1,898	1,500	18,831				
1990	15,678	22,149	7,466	91,800	154,406	2,922	0	200	0	0	0	0	0				
1991	9,584	16,714	2,211	47,000	81,684	0	0	0	0	0	0	0	0				
1992	20,310	32,300	7,600	96,000	171,900	5,700	0	0	0	0	0	0	0				
1993	21,370	22,505	18,895	98,000	177,400	5,700	0	0	0	0	0	0	0				
1994	22,483	11,011	30,989	100,000	182,000	5,700	0	0	0	0	0	0	0				
1995	23,647	11,011	30,989	100,000	184,000	5,700	0	0	0	0	0	0	0				
1996	21,369	12,596	29,404	100,000	186,001	5,700	0	0	0	0	0	0	0				
1997	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
1998	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
1999	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2000	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2001	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2002	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2003	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2004	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2005	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2006	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2007	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2008	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2009	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2010	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2011	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2012	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2013	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2014	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2015	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2016	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2017	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2018	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2019	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2020	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2021	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2022	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2023	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2024	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2025	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2026	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2027	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2028	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2029	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2030	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2031	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2032	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2033	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2034	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
2035	22,340	12,596	29,404	100,000	188,000	5,700	0	0	0	0	0	0	0				
TOTAL	1,089,008	824,228	1,371,439	6,518,480	11,104,996	357,039	300	200	602	12,647	1,898	1,500	18,831				

b) For the period June 1962 through November 1967, deliveries were supplied by non-Project water.

c) Includes 425 AF of 1988 advance entitlement.

TABLE B-5A

## Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Continued)

(in acre-feet)

Sheet 3 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)												
	SAN LUIS DIVISION (cont.)		SOUTH SAN JOAQUIN DIVISION										
	Reach 6	Reach 7	Reach 8C				Reach 8D				Reach 9		
	KCWA(AG)	KCWA(AG)	DRWD	TLBWSD	EWSID	CK	KCWA(AG)	DRWD	CK	TLBWSD	KCWA(M&I)	KCWA(AG)	TLBWSD
	[25]	[26]	[27]	[28]	[29]	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	25,100	1,978	900	0	26,360	0	0	0	30,951	0
1969	0	0	0	7,081	56	100	0	31,375	0	0	0	24,489	0
1970	0	0	0	0	3,942	0	0	40,407	0	3,408	0	46,114	1,855
1971	0	0	0	80,906	5,990	3,700	0	41,053	0	41,579	0	58,356	0
1972	0	0	0	144,843	5,795	1,400	0	42,443	0	113,550	0	75,484	0
1973	0	0	0	26,317	3,000	1,500	1,500	22,057	0	24,147	0	54,583	0
1974	0	0	0	32,603	3,000	1,500	0	33,390	0	39,686	0	63,814	0
1975	0	0	0	41,536	3,000	1,600	0	40,555	0	44,722	0	50,021	0
1976	0	0	0	26,595	3,000	1,600	0	41,421	0	32,216	0	53,465	0
1977	0	0	0	12,984	738	1,530	0	11,153	0	5,097	0	24,668	0
1978	0	0	0	3,934	454	2,070	0	51,747	0	8,119	0	72,231	0
1979	0	0	0	74,758	1,739	2,000	0	38,544	0	80,363	0	74,524	0
1980	0	0	0	35,140	894	2,200	0	41,000	0	34,104	0	79,946	0
1981	0	0	0	50,888	5,859	2,300	0	41,000	0	32,550	0	76,508	0
1982	0	0	0	4,405	361	1,536	0	41,000	214	14,146	0	76,877	0
1983	0	0	0	1,001	0	3,550	0	42,900	0	5	2,217	84,573	0
1984	0	0	0	3,677	0	3,100	0	45,100	0	2,066	4,100	85,732	0
1985	0	0	0	68,638	5,197	3,400	0	46,251	0	41,153	0	67,696	0
1986	0	0	0	40,017	1,170	3,700	0	50,249	0	39,338	0	79,943	0
1987	0	0	0	30,359	2,525	4,000	0	46,288	0	62,725	0	97,732	0
1988	0	0	0	47,831	3,775	4,000	0	47,994	0	48,035	1,100	83,858	0
1989	8,260	5,262	2,391	63,703	3,000	4,000	0	52,158	0	63,947	0	91,134	0
1990	0	0	0	23,504	1,279	2,000	161	36,296	0	32,066	0	83,108	0
1991	0	0	0	2,180	221	0	0	927	0	0	0	0	0
1992	0	0	0	47,400	3,000	4,000	0	57,700	0	71,100	0	107,532	0
1993	0	0	0	47,400	3,000	4,000	0	57,700	0	71,100	0	107,532	0
1994	0	0	0	47,400	3,000	4,000	0	57,700	0	71,100	0	107,532	0
1995	0	0	0	47,400	3,000	4,000	0	57,700	0	71,100	0	107,532	0
1996	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
1997	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
1998	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
1999	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2000	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2001	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2002	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2003	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2004	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2005	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2006	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2007	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2008	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2009	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2010	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2011	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2012	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2013	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2014	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2015	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2016	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2017	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2018	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2019	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2020	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2021	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2022	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2023	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2024	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2025	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2026	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2027	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2028	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2029	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2030	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2031	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2032	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2033	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2034	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
2035	0	0	0	48,310	3,000	4,000	0	57,700	0	70,190	0	91,200	0
TOTAL	8,260	5,262	2,391	2,970,000	188,973	227,686	1,661	3,450,468	214	3,855,022	7,417	5,613,915	1,855

TABLE B-5A

## Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Continued)

(in acre-feet)

Sheet 4 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	SOUTH SAN JOAQUIN DIVISION (continued)											
	Reach 10A			Reach 11B		Reach 12E			Reach 13B		Reach 14A	
	KCWA(M&I)	KCWA(AG)	TLBWSD	KCWA(M&I)	KCWA(AG)	KCWA(M&I)	KCWA(AG)	MWDSC	KCWA(M&I)	KCWA(AG)	KCWA(M&I)	KCWA(AG)
	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]	[47]	[48]	[49]
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	24,776	0	0	0	0	0	0	0
1969	0	0	2,842	0	64,682	0	0	0	0	0	0	0
1970	0	158	4,315	0	72,279	0	9,279	0	0	4,891	0	0
1971	0	9,973	0	0	63,773	0	28,056	0	0	0	0	23,844
1972	0	5,876	0	0	72,358	0	62,342	0	0	17,388	0	26,621
1973	0	22,948	0	0	67,544	0	13,082	0	0	9,297	0	15,328
1974	10,019	22,719	0	0	87,476	2,651	4,248	0	8,038	4,248	0	7,794
1975	2,791	72,121	0	0	85,675	0	10,787	0	8,538	7,059	0	10,306
1976	74	50,444	0	0	85,067	37,519	20,555	0	5,626	8,855	0	268
1977	201	34,451	0	3,981	29,603	20,280	1,737	0	0	5,024	0	8,299
1978	0	161,889	0	0	88,753	47,133	15,011	0	21,773	7,601	0	34,029
1979	285	153,245	0	484	108,379	50,740	61,567	0	5,663	17,766	3,012	27,356
1980	3,780	131,836	0	3,112	103,207	32,039	22,252	0	0	22,515	4,312	16,876
1981	341	133,500	0	494	104,395	59,917	58,470	0	7,844	14,037	4,511	13,007
1982	4,700	164,832	0	798	99,081	36,139	75,587	0	0	25,553	5,373	22,602
1983	0	146,493	0	2,069	94,117	0	10,950	0	0	3,491	1,168	20,302
1984	6,910	150,302	0	2,349	124,819	63,941	39,929	0	12,117	26,178	137	35,369
1985	6,495	153,473	0	10,666	118,646	69,839	84,117	0	0	67,711	206	33,103
1986	5,065	198,099	0	8,673	124,836	62,109	51,540	0	0	66,551	180	26,384
1987	900	226,521	0	13,074	111,877	95,297	86,223	0	5,609	40,374	610	30,098
1988	8,229	213,796	0	13,509	114,031	86,390	123,249	0	9,298	47,167	604	32,796
1989	21,038	251,979	0	9,986	127,058	83,965	148,544	0	5,504	57,114	721	29,292
1990	25,189	47,472	0	9,319	104,107	82,164	38,973	0	9,306	18,762	673	26,800
1991	2,826	0	0	7,506	0	47,318	0	0	0	0	404	0
1992	5,650	250,474	0	15,000	133,406	109,560	145,123	120,000	0	43,685	820	33,230
1993	5,650	250,474	0	15,000	133,406	109,560	145,123	120,000	0	43,685	820	33,230
1994	5,650	250,474	0	15,000	133,406	109,560	145,123	120,000	0	43,685	820	33,230
1995	5,650	250,474	0	15,000	133,406	109,560	145,123	120,000	0	43,685	820	33,230
1996	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
1997	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
1998	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
1999	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2000	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2001	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2002	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2003	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2004	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2005	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2006	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2007	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2008	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2009	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2010	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2011	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2012	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2013	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2014	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2015	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2016	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2017	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2018	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2019	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2020	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2021	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2022	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2023	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2024	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2025	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2026	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2027	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2028	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2029	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2030	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2031	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2032	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2033	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2034	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
2035	2,600	245,053	0	20,000	129,059	113,400	173,588	0	0	35,500	800	35,075
TOTAL	225,443	13,156,142	7,157	946,020	7,772,523	5,851,681	8,488,510	480,000	99,316	2,066,320	57,191	1,976,394

TABLE B-5A  
Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Continued)

(in acre-feet)

Sheet 5 of 8

Calendar  Year	CALIFORNIA AQUEDUCT (continued)												TEHACHAPI DIVISION	MOJAVE DIVISION		
	SOUTH SAN JOAQUIN DIVISION (continued)								Reach 17E	Reach 18A	Reach 19	Reach 20A				
	Reach 14B		Reach 14C		Reach 15A		Reach 16A									
	KCWA (M&I)	KCWA (AG)	KCWA (M&I)	KCWA (AG)	KCWA (M&I)	KCWA (AG)	KCWA (M&I)	KCWA (AG)								
	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]				
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	49,929	0	24,187	0	3,552	0	0	0	0	0	0	0	0	0	0
1972	0	77,034	0	35,016	0	6,064	0	4,768	0	0	0	0	0	0	0	0
1973	0	47,040	0	19,043	0	19,916	0	1,961	0	0	0	0	0	0	0	0
1974	0	32,356	0	12,601	0	18,000	3,000	1,564	0	0	0	1,223	0	0	0	0
1975	0	27,736	0	12,783	0	35,420	3,200	9,867	0	0	0	7,622	0	0	0	0
1976	0	35,296	0	9,005	0	39,551	3,500	11,667	0	3,808	23,063	0	0	0	0	0
1977	0	13,539	0	3,757	0	6,158	3,420	685	0	1,231	8,927	0	0	0	0	0
1978	0	72,351	0	24,542	0	31,148	7,989	1,655	0	1,321	36,333	0	0	0	0	0
1979	0	59,413	0	22,372	0	38,602	2,813	15,808	0	2,098	49,910	0	0	0	0	0
1980	0	40,513	0	19,953	0	37,817	2,700	16,145	0	2,610	61,534	0	0	0	0	0
1981	8	42,753	7	18,729	0	39,033	2,636	18,156	0	2,340	65,690	0	0	0	0	0
1982	184	57,739	0	26,479	0	47,782	1,289	17,209	0	1,669	41,127	0	0	0	0	0
1983	0	57,922	0	26,613	0	37,426	1,400	17,907	0	43	26,377	0	0	0	0	0
1984	10	79,179	2	34,996	0	49,848	1,338	24,202	0	90	22,462	0	0	0	0	0
1985	0	72,855	0	31,758	0	44,078	1,309	16,820	0	8	23,440	1,510	0	0	0	0
1986	0	70,864	0	34,566	0	42,461	1,213	15,559	0	8	16,898	3,041	0	0	0	0
1987	9	67,710	9	31,019	0	34,748	1,665	10,170	0	0	15,958	2,389	0	0	0	0
1988	4	75,983	0	37,166	2	41,992	1,913	8,999	0	0	13,471	366	0	0	0	0
1989	7	82,201	5	37,800	2	43,239	2,668	8,649	0	0	18,007	381	0	0	0	0
1990	13	81,076	9	34,174	6	36,347	2,819	8,608	0	0	15,164	282	0	0	0	0
1991	30	0	10	0	30	0	1,676	0	0	15	4,447	0	0	0	0	0
1992	60	93,253	20	42,888	50	49,943	3,440	11,866	0	96	25,425	0	0	0	0	0
1993	60	93,253	20	42,888	50	49,943	3,440	11,866	0	120	25,750	0	0	0	0	0
1994	60	93,253	20	42,888	50	49,943	3,440	11,866	0	144	26,265	0	0	0	0	0
1995	60	93,253	20	42,888	50	49,943	3,440	11,866	0	144	26,680	0	0	0	0	0
1996	0	60,000	0	44,000	0	45,075	2,200	17,850	0	0	27,076	0	0	0	0	0
1997	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	28,521	0	0	0	0	0
1998	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	29,967	0	0	0	0	0
1999	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	31,412	0	0	0	0	0
2000	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	32,858	0	0	0	0	0
2001	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	34,173	0	0	0	0	0
2002	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	35,487	0	0	0	0	0
2003	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	36,801	0	0	0	0	0
2004	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	38,116	0	0	0	0	0
2005	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2006	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2007	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2008	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2009	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2010	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2011	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2012	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2013	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2014	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2015	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2016	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2017	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2018	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2019	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2020	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	39,430	0	0	0	0	0
2021	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	43,110	0	0	0	0	0
2022	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	46,790	0	0	0	0	0
2023	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	50,470	0	0	0	0	0
2024	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	54,150	0	0	0	0	0
2025	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	57,830	0	0	0	0	0
2026	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	57,830	0	0	0	0	0
2027	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	57,830	0	0	0	0	0
2028	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	57,830	0	0	0	0	0
2029	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	57,830	0	0	0	0	0
2030	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	57,830	0	0	0	0	0
2031	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	57,830	0	0	0	0	0
2032	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	57,830	0	0	0	0	0
2033	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	57,830	0	0	0	0	0
2034	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	57,830	0	0	0	0	0
2035	0	80,000	0	44,000	0	45,075	2,200	17,850	0	0	57,830	0	0	0	0	0
TOTAL	505	4,716,504	122	2,428,111	240	2,655,954	148,308	971,863	0	15,745	2,311,714	7,969	0	0	0	0



TABLE B-5A

## Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Continued)

(in acre-feet)													Sheet 6 of 8
Calendar Year	CALIFORNIA AQUEDUCT (continued)												
	MOJAVE DIVISION (continued)												
	Reach 20A	Reach 20B		Reach 21		Reach 22A	Reach 22B					Reach 23	
AVEKWA	PWD	AVEKWA	LCID	PWD	AVEKWA	MWDSC(d	CVWD(d	AVEKWA(e	DWA(d	MWA	MWA		
	[62]	[63]	[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	
1962	0	0	0	0	0	0	0	0	0	0	0	0	
1963	0	0	0	0	0	0	0	0	0	0	0	0	
1964	0	0	0	0	0	0	0	0	0	0	0	0	
1965	0	0	0	0	0	0	0	0	0	0	0	0	
1966	0	0	0	0	0	0	0	0	0	0	0	0	
1967	0	0	0	0	0	0	0	0	0	0	0	0	
1968	0	0	0	0	0	0	0	0	0	0	0	0	
1969	0	0	0	0	0	0	0	0	0	0	0	0	
1970	0	0	0	0	0	0	0	0	0	0	0	0	
1971	0	0	0	0	0	0	0	0	0	0	0	0	
1972	0	0	0	338	0	0	0	0	0	0	55	0	
1973	0	0	0	290	0	0	(14,800)	5,800	0	9,000	0	0	
1974	0	0	0	400	0	0	(16,400)	6,400	0	10,000	0	14	
1975	420	0	0	520	0	0	(18,000)	7,000	0	11,000	0	0	
1976	471	0	416	589	0	0	(19,600)	7,600	0	12,000	0	0	
1977	773	0	271	111	0	0	0	0	0	0	22	58	
1978	5,549	0	934	208	0	0	(25,384)	10,084	0	15,300	0	0	
1979	7,555	0	930	133	0	0	(25,063)	10,063	0	15,000	4,000	0	
1980	7,605	0	655	191	0	3	(27,884)	10,884	0	17,000	4,000	0	
1981	10,333	0	966	1,270	0	46	(31,105)	12,105	0	19,000	4,000	0	
1982	7,313	0	8	0	0	174	(34,326)	13,326	0	21,000	10,500	0	
1983	6,253	0	20	38	0	268	(37,547)	14,547	0	23,000	0	0	
1984	9,558	0	2	1	0	550	(40,768)	15,768	0	25,000	0	0	
1985	11,613	32	217	0	16	1,786	(43,989)	16,989	0	27,000	0	0	
1986	13,808	45	0	163	10	1,735	(47,210)	18,210	0	29,000	0	0	
1987	15,493	1,624	151	1,080	1,366	2,278	(50,931)	19,431	214	31,500	17	0	
1988	17,117	1,261	281	419	143	3,210	(54,652)	20,652	0	34,000	9	0	
1989	23,481	7,848	112	971	780	3,591	0	0	89	0	0	200	
1990	27,680	8,292	75	1,747	34	4,290	(61,200)	23,100	0	38,100	0	0	
1991	16,292	6,525	748	858	0	1,490	(30,600)	11,550	0	19,050	0	0	
1992	33,510	16,110	2,100	2,300	0	4,415	(61,200)	23,100	0	38,100	0	0	
1993	35,170	17,280	2,810	2,300	0	4,755	(61,200)	23,100	0	38,100	0	0	
1994	36,920	17,300	3,600	2,300	0	5,070	(61,200)	23,100	0	38,100	0	0	
1995	38,760	17,300	4,345	2,300	0	5,405	(61,200)	23,100	0	38,100	0	0	
1996	44,151	17,300	1,670	2,300	0	9,504	(61,200)	23,100	0	38,100	50,800	0	
1997	46,508	17,300	1,759	2,300	0	10,011	(61,200)	23,100	0	38,100	50,800	0	
1998	48,866	17,300	1,849	2,300	0	10,519	(61,200)	23,100	0	38,100	50,800	0	
1999	51,223	17,300	1,938	2,300	0	11,027	(61,200)	23,100	0	38,100	50,800	0	
2000	53,581	17,300	2,027	2,300	0	11,534	(61,200)	23,100	0	38,100	50,800	0	
2001	55,724	17,300	2,108	2,300	0	11,996	(61,200)	23,100	0	38,100	50,800	0	
2002	57,867	17,300	2,189	2,300	0	12,457	(61,200)	23,100	0	38,100	50,800	0	
2003	60,011	17,300	2,270	2,300	0	12,918	(61,200)	23,100	0	38,100	50,800	0	
2004	62,154	17,300	2,351	2,300	0	13,379	(61,200)	23,100	0	38,100	50,800	0	
2005	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2006	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2007	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2008	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2009	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2010	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2011	64,296	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2012	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2013	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2014	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2015	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2016	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2017	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2018	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2019	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2020	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2021	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2022	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2023	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2024	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2025	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2026	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2027	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2028	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2029	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2030	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2031	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2032	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2033	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2034	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
2035	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0	38,100	50,800	0	
TOTAL	2,798,965	785,617	112,194	110,527	2,349	571,482	(3,272,259)	1,239,909	303	2,032,350	2,054,603	272	

d) In accordance with the Exchange Agreement between the noted agencies, MWDSC assumed responsibility for payment of variable OMP&R costs on the exchange water in reaches beyond Reach 22B, and Desert Water Agency and Coachella Valley Water District for such costs from the Delta through Reach 22B. The adjustment in deliveries in Reach 22B provides for compliance with provisions for the repayment of costs under the agreement.

e) 1988 advance entitlement.

TABLE B-5A

## Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Continued)

(in acre-feet)

Sheet 7 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)													
	MOJAVE DIV.		SANTA ANA DIVISION											
	Reach 24		Reach 26A						Reach 26G	Reach 26H	Reach 28J	Reach 29F	Reach 29H	
	CLAWA	MWA	MWDSC	SBVMWD(f)	SGVMWD	SGPWA	CVWD	DWA	MWDSC	MWDSC	MWDSC	AVEKWA	VCFC	
	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]	[82]	[83]	[84]	[85]	[86]	
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	464	0	0	1,275	0	0	0	0	0	0	0	0	53	0
1973	389	0	444	32,426	0	0	0	0	18,942	0	0	0	20	0
1974	627	0	84,981	16,605	612	0	0	0	0	0	0	0	36	0
1975	825	0	169,960	13,865	5,450	0	0	0	0	0	251	26	0	0
1976	1,002	0	215,312	12,273	6,071	0	0	0	0	55	2,000	24	0	0
1977	1,109	0	64,823	24,833	8,996	0	0	0	0	43	2,442	0	0	0
1978	1,209	0	297,708	4,055	7,771	0	0	0	0	48	64,054	0	0	0
1979	1,260	0	260,903	18	290	0	0	0	0	1,290	94,353	0	0	0
1980	1,239	0	300,345	0	1,085	0	0	0	0	3,013	91,532	0	0	0
1981	1,485	0	395,678	16,021	3,619	0	0	0	0	4,365	149,405	0	0	0
1982	1,238	0	214,566	8,409	12,599	0	0	0	0	3,961	155,629	0	0	0
1983	911	0	175,288	5,994	734	0	0	0	0	6,645	41,616	0	0	0
1984	1,128	0	122,311	5,556	7,656	0	0	0	0	106,781	5,270	0	0	0
1985	1,422	0	147,599	7,390	5,028	0	0	0	0	182,781	6,538	0	0	0
1986	1,506	0	215,265	6,421	9,454	0	0	0	0	131,439	30,071	0	0	0
1987	1,849	0	175,012	8,751	10,630	0	0	0	0	144,743	26,315	0	0	0
1988	2,006	0	247,101	12,637	8,948	0	0	0	0	199,641	22,209	0	0	0
1989	2,170	0	267,844	20,782	12,839	0	21,873	36,500	0	247,430	51,462	0	0	0
1990	1,836	0	399,387	18,831	16,649	0	0	0	0	257,796	36,060	0	4,836	0
1991	1,950	25,400	218,350	15,000	9,000	0	0	0	0	206,550	26,200	0	3,114	0
1992	2,590	50,600	435,700	30,000	18,000	0	0	0	0	414,100	52,400	0	5,000	0
1993	2,735	50,800	442,300	40,000	18,000	0	0	0	0	417,300	42,600	0	5,000	0
1994	2,875	50,800	473,000	46,000	18,000	0	0	0	0	428,900	42,600	0	5,000	0
1995	3,020	50,800	473,000	46,000	18,000	0	0	0	0	428,900	42,600	0	5,000	0
1996	3,788	0	606,700	50,000	15,340	0	0	0	0	443,300	44,000	0	900	0
1997	3,951	0	606,700	50,000	15,680	0	0	0	0	443,300	44,000	0	1,300	0
1998	4,114	0	606,700	50,000	16,020	0	0	0	0	443,300	44,000	0	1,700	0
1999	4,277	0	606,700	50,000	16,360	0	0	0	0	443,300	44,000	0	2,100	0
2000	4,440	0	606,700	50,000	16,700	17,300	0	0	0	443,300	44,000	0	2,500	0
2001	4,586	0	606,700	50,000	17,040	17,300	0	0	0	443,300	44,000	0	2,838	0
2002	4,732	0	606,700	50,000	17,380	17,300	0	0	0	443,300	44,000	0	3,176	0
2003	4,878	0	606,700	50,000	17,720	17,300	0	0	0	443,300	44,000	0	3,514	0
2004	5,024	0	606,700	54,000	18,060	17,300	0	0	0	443,300	44,000	0	3,852	0
2005	5,170	0	606,700	58,000	18,400	17,300	0	0	0	443,300	44,000	0	4,200	0
2006	5,256	0	606,700	62,000	18,740	17,300	0	0	0	443,300	44,000	0	4,362	0
2007	5,342	0	606,700	66,000	19,080	17,300	0	0	0	443,300	44,000	0	4,524	0
2008	5,428	0	606,700	70,000	19,420	17,300	0	0	0	443,300	44,000	0	4,686	0
2009	5,514	0	606,700	74,000	19,760	17,300	0	0	0	443,300	44,000	0	4,848	0
2010	5,600	0	606,700	78,000	20,100	17,300	0	0	0	443,300	44,000	0	5,000	0
2011	5,640	0	606,700	82,000	20,460	17,300	0	0	0	443,300	44,000	0	5,000	0
2012	5,680	0	606,700	86,000	20,820	17,300	0	0	0	443,300	44,000	0	5,000	0
2013	5,720	0	606,700	90,000	21,180	17,300	0	0	0	443,300	44,000	0	5,000	0
2014	5,760	0	606,700	92,000	21,540	17,300	0	0	0	443,300	44,000	0	5,000	0
2015	5,800	0	606,700	94,000	21,900	17,300	0	0	0	443,300	44,000	0	5,000	0
2016	5,800	0	606,700	96,000	22,240	17,300	0	0	0	443,300	44,000	0	5,000	0
2017	5,800	0	606,700	98,000	22,580	17,300	0	0	0	443,300	44,000	0	5,000	0
2018	5,800	0	606,700	100,000	22,920	17,300	0	0	0	443,300	44,000	0	5,000	0
2019	5,800	0	606,700	100,480	23,260	17,300	0	0	0	443,300	44,000	0	5,000	0
2020	5,800	0	606,700	100,960	23,600	17,300	0	0	0	443,300	44,000	0	5,000	0
2021	5,800	0	606,700	101,440	23,940	17,300	0	0	0	443,300	44,000	0	5,000	0
2022	5,800	0	606,700	101,920	24,280	17,300	0	0	0	443,300	44,000	0	5,000	0
2023	5,800	0	606,700	102,400	24,620	17,300	0	0	0	443,300	44,000	0	5,000	0
2024	5,800	0	606,700	102,600	24,960	17,300	0	0	0	443,300	44,000	0	5,000	0
2025	5,800	0	606,700	102,600	25,300	17,300	0	0	0	443,300	44,000	0	5,000	0
2026	5,800	0	606,700	102,600	25,640	17,300	0	0	0	443,300	44,000	0	5,000	0
2027	5,800	0	606,700	102,600	25,980	17,300	0	0	0	443,300	44,000	0	5,000	0
2028	5,800	0	606,700	102,600	26,320	17,300	0	0	0	443,300	44,000	0	5,000	0
2029	5,800	0	606,700	102,600	26,660	17,300	0	0	0	443,300	44,000	0	5,000	0
2030	5,800	0	606,700	102,600	27,000	17,300	0	0	0	443,300	44,000	0	5,000	0
2031	5,800	0	606,700	102,600	27,360	17,300	0	0	0	443,300	44,000	0	5,000	0
2032	5,800	0	606,700	102,600	27,720	17,300	0	0	0	443,300	44,000	0	5,000	0
2033	5,800	0	606,700	102,600	28,080	17,300	0	0	0	443,300	44,000	0	5,000	0
2034	5,800	0	606,700	102,600	28,440	17,300	0	0	0	443,300	44,000	0	5,000	0
2035	5,800	0	606,700	102,600	28,800	17,300	0	0	0	443,300	44,000	0	5,000	0
TOTAL	253,545	228,600	33,796,419	4,812,373	1,703,631	644,673	58,373	55,442	20,936,723	23,663,388	2,745,766	202,609	202,450	

f) Includes 1,650 AF recaptured from ground water storage in 1982, 10,000 AF in 1987, and 8,749 AF in 1988. This water was stored under DWR's Ground Water Demonstration Program.

TABLE B-5A  
Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Continued)

(in acre-feet)													Sheet 8 of 8	
Calendar Year	CALIFORNIA AQUEDUCT (continued)											GRAND TOTAL		
	WEST BRANCH (continued)				COASTAL BRANCH						TOTAL			
	Reach 30				Reach 31A		Reach 33A	Reach 34	Reach 35					
	MWDSC(g)	VCFCd	CLWA	SBCFC&WCD	KCWA (AG)	CLWA	SLOCFC&WCD	SLOCFC&WCD	SLOCFC&WCD	SBCFC&WCD				
	[87]	[88]	[89]	[90]	[91]	[92]	[93]	[94]	[95]	[96]	[97]	[98]		
1962	0	0	0	0	0	0	0	0	0	0	0	8,906		
1963	0	0	0	0	0	0	0	0	0	0	0	12,645		
1964	0	0	0	0	0	0	0	0	0	0	0	20,911		
1965	0	0	0	0	0	0	0	0	0	0	0	34,026		
1966	0	0	0	0	0	0	0	0	0	0	0	54,913		
1967	0	0	0	0	0	0	0	0	0	0	0	56,763		
1968	0	0	0	0	71,657	7,382	0	0	0	0	192,188	294,457		
1969	0	0	0	0	52,094	9,970	0	0	0	0	195,705	268,104		
1970	0	0	0	0	71,910	11,739	0	0	0	0	276,211	369,459		
1971	0	0	0	0	98,481	12,490	0	0	0	0	553,081	654,250		
1972	71,938	0	0	0	107,850	13,905	0	0	0	0	895,006	1,037,584		
1973	155,297	0	0	0	69,227	9,418	0	0	0	0	638,930	737,479		
1974	209,136	0	0	0	68,474	9,700	0	0	0	0	783,984	878,820		
1975	374,280	0	0	0	74,516	10,700	0	0	0	0	1,129,728	1,230,577		
1976	420,684	0	0	0	78,358	11,700	0	0	0	0	1,245,662	1,379,597		
1977	122,447	0	0	0	35,504	5,075	0	0	0	0	465,442	581,675		
1978	171,139	0	0	0	81,242	11,362	0	0	0	0	1,339,268	1,458,154		
1979	145,591	0	7	0	104,017	19,138	0	0	0	0	1,537,075	1,666,155		
1980	164,721	0	1,210	0	97,497	13,882	0	0	0	0	1,407,163	1,529,989		
1981	277,503	0	5,761	0	97,054	12,700	0	0	0	0	1,779,479	1,918,342		
1982	351,362	0	9,516	0	83,076	12,700	0	0	0	0	1,641,571	1,749,789		
1983	157,519	0	9,476	0	87,859	12,659	0	0	0	0	1,089,626	1,186,831		
1984	260,624	0	11,477	0	119,098	12,741	0	0	0	0	1,486,406	1,587,723		
1985	390,696	0	12,401	0	110,124	12,099	0	0	0	0	1,863,544	1,989,925		
1986	379,275	0	13,928	0	118,298	13,301	0	0	0	0	1,882,290	1,998,514		
1987	417,285	0	16,167	0	116,259	11,821	0	0	0	0	1,974,569	2,121,060		
1988	488,265	0	18,904	0	109,435	11,534	0	0	0	0	2,213,089	2,375,985		
1989	589,962	0	21,719	0	102,156	14,645	0	0	0	0	2,688,338	2,852,168		
1990	764,380	0	22,129	0	103,362	6,340	0	0	0	0	2,396,523	2,575,457		
1991	416,877	0	13,050	3,600	0	0	0	0	0	0	1,032,594	1,131,090		
1992	852,000	0	28,400	3,600	107,400	12,700	0	0	0	0	3,451,546	3,655,893		
1993	947,000	0	33,050	0	107,400	12,700	0	0	0	0	3,561,970	3,774,436		
1994	947,000	0	36,950	0	107,400	12,700	0	0	0	0	3,617,724	3,837,350		
1995	947,000	0	40,765	0	107,400	12,700	0	0	0	0	3,625,019	3,853,353		
1996	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,777,515	4,010,546		
1997	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,782,816	4,019,631		
1998	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,788,121	4,026,721		
1999	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,793,423	4,033,808		
2000	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,816,026	4,058,206		
2001	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,820,851	4,064,057		
2002	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,825,674	4,069,906		
2003	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,830,498	4,075,756		
2004	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,839,322	4,085,606		
2005	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,848,156	4,095,466		
2006	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,852,744	4,100,714		
2007	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,857,332	4,105,962		
2008	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,861,920	4,111,210		
2009	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,866,508	4,116,458		
2010	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,871,086	4,121,696		
2011	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,875,485	4,126,865		
2012	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,879,886	4,132,036		
2013	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,884,286	4,137,216		
2014	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,888,686	4,140,396		
2015	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,889,086	4,143,586		
2016	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,891,426	4,146,626		
2017	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,893,766	4,149,566		
2018	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,896,106	4,152,506		
2019	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,898,926	4,153,926		
2020	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,897,746	4,155,346		
2021	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,902,246	4,159,866		
2022	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,906,746	4,164,386		
2023	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,911,246	4,168,906		
2024	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,915,466	4,173,146		
2025	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,919,486	4,177,186		
2026	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,919,826	4,177,526		
2027	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,920,166	4,177,866		
2028	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,920,506	4,178,206		
2029	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,920,846	4,178,546		
2030	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,921,186	4,178,886		
2031	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,921,546	4,179,246		
2032	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,921,906	4,179,606		
2033	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,922,266	4,179,966		
2034	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,922,626	4,180,326		
2035	978,700	15,000	41,500	0	118,000	12,700	10,000	5,000	10,000	45,486	3,922,986	4,180,686		
TOTAL	49,169,981	600,000	1,954,910	7,200	7,207,148	825,801	400,000	200,000	400,000	1,819,440	200,056,172	214,050,542		

g) Deliveries exclude 6,171 AF of 1982 exchange water.

Note: As of January 1, 1992, Castaic Lake Water Agency will assume all rights and obligations granted to Devil's Den Water District according to its long-term water supply contract with the state of California.

TABLE B-5B  
Annual Water Quantities Delivered to Each Contractor

(in acre-feet)

Sheet 1 of 4

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA (b)				CENTRAL COASTAL AREA		
	(a) Napa County FC&WCD	Solano County WA	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1962	0	0	0	494	8,412	0	8,906	0	0	0
1963	0	0	0	1,731	10,914	0	12,645	0	0	0
1964	0	0	0	1,673	19,238	0	20,911	0	0	0
1965	0	0	0	2,605	16,407	15,014	34,026	0	0	0
1966	0	0	0	5,511	14,864	34,538	54,913	0	0	0
1967	0	0	0	4,780	12,882	39,101	56,763	0	0	0
1968	1,214	0	1,214	6,133	24,817	70,105	101,055	0	0	0
1969	2,687	0	2,687	6,635	813	62,264	69,712	0	0	0
1970	3,618	0	3,618	9,249	0	80,311	89,560	0	0	0
1971	2,521	0	2,521	5,017	5,961	87,606	98,584	0	0	0
1972	3,647	0	3,647	10,489	27,671	100,266	138,426	0	0	0
1973	3,792	0	3,792	2,975	2,521	88,582	94,078	0	0	0
1974	4,870	0	4,870	1,314	4	88,000	89,318	0	0	0
1975	6,840	0	6,840	4,618	986	88,000	93,604	0	0	0
1976	7,122	0	7,122	17,131	21,300	88,000	126,431	0	0	0
1977	8,226	0	8,226	12,644	18,840	76,220	107,704	0	0	0
1978	6,034	0	6,034	10,984	5,863	95,727	112,574	0	0	0
1979	6,561	0	6,561	19,325	10,874	91,991	122,190	0	0	0
1980	6,707	0	6,707	16,790	11,034	88,000	115,824	0	0	0
1981	9,001	0	9,001	19,590	21,917	88,000	129,507	0	0	0
1982	1,213	0	1,213	13,123	6,316	87,261	106,700	0	0	0
1983	2,287	0	2,287	4,766	3,157	86,733	94,656	0	0	0
1984	2,923	0	2,923	6,784	3,338	88,000	98,122	0	0	0
1985	4,039	0	4,039	15,072	19,016	88,000	122,088	0	0	0
1986	3,519	1,400	4,919	10,609	12,379	88,000	110,988	0	0	0
1987	7,693	1,550	9,243	23,406	25,390	88,000	136,796	0	0	0
1988	5,392	9,726	15,118	25,830	33,464	87,961	147,255	0	0	0
1989	3,819	17,256	21,075	26,227	26,042	90,000	142,269	0	0	0
1990	5,506	18,448	23,954	32,991	29,615	92,000	154,606	0	0	0
1991	3,372	12,900	16,272	15,759	18,925	47,000	81,684	0	3,600	3,600
1992	7,157	24,170	31,327	36,000	39,900	96,000	171,900	0	3,600	3,600
1993	7,776	26,130	33,906	38,000	41,400	98,000	177,400	0	0	0
1994	8,346	28,080	36,426	40,000	42,000	100,000	182,000	0	0	0
1995	8,834	34,250	43,084	42,000	42,000	100,000	184,000	0	0	0
1996	10,414	35,316	45,730	44,001	42,000	100,000	186,001	25,000	45,486	70,486
1997	11,073	36,392	47,465	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1998	11,732	37,468	49,200	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1999	12,391	38,544	50,935	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2000	13,050	39,620	52,670	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2001	13,640	39,996	53,636	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2002	14,230	40,372	54,602	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2003	14,820	40,748	55,568	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2004	15,410	41,124	56,534	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2005	16,000	41,500	57,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2006	16,540	41,550	58,090	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2007	17,080	41,600	58,680	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2008	17,620	41,650	59,270	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2009	18,160	41,700	59,860	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2010	18,700	41,750	60,450	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2011	19,340	41,800	61,140	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2012	19,980	41,850	61,830	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2013	20,620	41,900	62,520	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2014	21,260	41,950	63,210	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2015	21,900	42,000	63,900	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2016	22,500	42,000	64,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2017	23,100	42,000	65,100	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2018	23,700	42,000	65,700	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2019	24,300	42,000	66,300	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2020	24,900	42,000	66,900	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2021	24,920	42,000	66,920	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2022	24,940	42,000	66,940	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2023	24,960	42,000	66,960	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2024	24,980	42,000	66,980	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2025	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2026	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2027	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2028	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2029	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2030	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2031	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2032	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2033	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2034	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2035	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
TOTAL	961,976	1,822,740	2,784,716	2,328,256	2,258,260	6,518,680	11,105,196	1,000,000	1,826,640	2,826,640

a) For the period 1968 through 1987, deliveries are non-Project water pumped through an interim facility.

b) For the period June 1962 through November 1967, deliveries were supplied by non-Project water.

TABLE B-5B  
Annual Water Quantities Delivered to Each Contractor (Continued)

(in acre-feet)

Sheet 2 of 4

Calendar Year	SAN JOAQUIN VALLEY AREA								
	Dudley Ridge Water District	Empire West Side Irrigation District	Kern County Water Agency			County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
			Municipal and Industrial	Agricultural	Total				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	26,360	1,978	0	127,384	127,384	900	3,084	25,100	184,806
1969	31,375	56	0	141,265	141,265	100	3,016	9,923	185,735
1970	40,407	3,942	0	204,634	204,634	0	5,911	9,578	264,472
1971	41,053	5,990	0	360,151	360,151	3,700	7,212	122,485	540,591
1972	42,443	5,795	0	490,781	490,781	1,400	8,166	258,393	806,978
1973	22,057	3,000	0	341,469	341,469	1,500	3,214	50,464	421,704
1974	33,390	3,000	23,708	323,292	347,000	1,500	3,471	72,289	460,650
1975	40,555	3,000	14,529	396,291	410,820	1,600	3,576	86,258	545,809
1976	41,421	3,000	46,719	392,531	439,250	1,600	4,112	58,811	548,194
1977	11,153	738	27,882	163,425	191,307	1,530	1,472	18,081	224,281
1978	51,747	454	76,895	590,452	667,347	2,070	3,906	12,053	737,577
1979	38,544	1,739	62,997	683,049	746,046	2,000	6,149	155,121	949,599
1980	41,000	894	45,943	588,557	634,500	2,200	5,700	69,244	753,538
1981	41,000	5,859	75,758	615,642	691,400	2,300	4,300	83,438	828,297
1982	41,000	361	48,483	696,817	745,300	1,750	3,838	18,551	810,800
1983	42,900	0	6,854	587,653	594,507	3,550	3,822	1,006	645,785
1984	45,100	0	90,904	769,652	860,556	3,100	5,700	5,743	920,199
1985	46,251	5,197	88,515	800,381	888,896	3,400	5,433	109,791	1,058,968
1986	50,249	1,170	77,240	829,101	906,341	3,700	5,107	79,355	1,045,922
1987	46,288	2,525	117,173	852,731	969,904	4,000	5,625	93,084	1,121,426
1988	47,994	3,775	121,049	888,471	1,009,520	4,000	4,412	95,866	1,165,567
1989	57,049	3,000	123,896	1,022,166	1,146,062	4,000	6,091	127,950	1,344,152
1990	36,296	1,279	129,498	582,950	712,448	2,000	2,922	57,070	812,015
1991	927	221	59,800	0	59,800	0	0	2,180	63,128
1992	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1993	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1994	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1995	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,342,300
1996	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
1997	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
1998	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
1999	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2000	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2001	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2002	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2003	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2004	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2005	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2006	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2007	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2008	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2009	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2010	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2011	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2012	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2013	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2014	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2015	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2016	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2017	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2018	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2019	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2020	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2021	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2022	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2023	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2024	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2025	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2026	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2027	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2028	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2029	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2030	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2031	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2032	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2033	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2034	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
2035	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,342,300
TOTAL	3,455,359	188,973	7,336,243	57,100,045	64,436,288	227,900	357,039	6,835,834	75,501,393

TABLE B-5B  
Annual Water Quantities Delivered to Each Contractor (Continued)

(in acre-feet)

Sheet 3 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley- East Kern Water Agency	Castaic Lake Water Agency(c)	Coachella Valley Water District	Crestline- Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	7,382	0	0	0	0	0	0	0	0
1969	0	9,970	0	0	0	0	0	0	0	0
1970	0	11,739	0	0	0	0	0	0	0	0
1971	0	12,490	0	0	0	0	0	0	0	0
1972	53	13,905	0	464	0	338	55	0	1,275	0
1973	20	9,418	5,800	389	9,000	290	0	0	32,426	0
1974	1,259	9,700	6,400	627	10,000	400	14	0	16,605	612
1975	8,068	10,700	7,000	825	11,000	520	0	0	13,865	5,450
1976	27,782	11,700	7,800	1,002	12,000	589	0	0	12,273	6,071
1977	11,202	5,075	0	1,109	0	111	80	0	24,833	8,996
1978	44,137	11,362	10,084	1,209	15,300	208	0	0	4,055	7,771
1979	60,493	19,145	10,063	1,260	15,000	133	4,000	0	18	290
1980	72,407	15,092	10,884	1,239	17,000	191	4,000	0	0	1,085
1981	79,375	18,461	12,105	1,485	19,000	1,270	4,000	0	16,021	3,619
1982	50,291	22,216	13,326	1,238	21,000	0	10,500	0	8,409	12,599
1983	32,961	22,135	14,547	911	23,000	38	0	0	5,994	734
1984	32,662	24,218	15,768	1,128	25,000	1	0	0	5,556	7,656
1985	37,064	24,500	16,989	1,422	27,000	0	0	1,558	7,390	5,028
1986	32,449	27,229	18,210	1,506	29,000	163	0	3,096	6,421	9,454
1987	34,094	27,988	19,431	1,849	31,500	1,080	17	5,379	8,751	10,630
1988	34,079	30,438	20,652	2,006	34,000	419	9	1,770	12,637	8,948
1989	45,260	36,364	21,873	2,170	36,500	971	200	9,009	20,782	12,839
1990	47,209	28,469	23,100	1,836	38,100	1,747	0	8,608	18,831	16,849
1991	22,992	13,050	11,550	1,950	19,050	858	25,400	6,525	15,000	9,000
1992	65,546	41,100	23,100	2,590	38,100	2,300	50,800	16,110	30,000	18,000
1993	68,605	45,750	23,100	2,735	38,100	2,300	50,800	17,280	40,000	18,000
1994	71,999	49,650	23,100	2,875	38,100	2,300	50,800	17,300	46,000	18,000
1995	75,334	53,465	23,100	3,020	38,100	2,300	50,800	17,300	46,000	18,000
1996	82,401	54,200	23,100	3,788	38,100	2,300	50,800	17,300	50,000	15,340
1997	86,799	54,200	23,100	3,951	38,100	2,300	50,800	17,300	50,000	15,680
1998	91,201	54,200	23,100	4,114	38,100	2,300	50,800	17,300	50,000	16,020
1999	95,600	54,200	23,100	4,277	38,100	2,300	50,800	17,300	50,000	16,360
2000	100,000	54,200	23,100	4,440	38,100	2,300	50,800	17,300	50,000	16,700
2001	104,001	54,200	23,100	4,586	38,100	2,300	50,800	17,300	50,000	17,040
2002	108,000	54,200	23,100	4,732	38,100	2,300	50,800	17,300	50,000	17,380
2003	112,000	54,200	23,100	4,878	38,100	2,300	50,800	17,300	50,000	17,720
2004	116,000	54,200	23,100	5,024	38,100	2,300	50,800	17,300	54,000	18,060
2005	120,000	54,200	23,100	5,170	38,100	2,300	50,800	17,300	58,000	18,400
2006	120,000	54,200	23,100	5,256	38,100	2,300	50,800	17,300	62,000	18,740
2007	120,000	54,200	23,100	5,342	38,100	2,300	50,800	17,300	66,000	19,080
2008	120,000	54,200	23,100	5,428	38,100	2,300	50,800	17,300	70,000	19,420
2009	120,000	54,200	23,100	5,514	38,100	2,300	50,800	17,300	74,000	19,760
2010	120,000	54,200	23,100	5,600	38,100	2,300	50,800	17,300	78,000	20,100
2011	119,999	54,200	23,100	5,640	38,100	2,300	50,800	17,300	82,000	20,460
2012	120,000	54,200	23,100	5,680	38,100	2,300	50,800	17,300	86,000	20,820
2013	120,000	54,200	23,100	5,720	38,100	2,300	50,800	17,300	90,000	21,180
2014	120,000	54,200	23,100	5,760	38,100	2,300	50,800	17,300	92,000	21,540
2015	120,000	54,200	23,100	5,800	38,100	2,300	50,800	17,300	94,000	21,900
2016	120,000	54,200	23,100	5,800	38,100	2,300	50,800	17,300	96,000	22,240
2017	120,000	54,200	23,100	5,800	38,100	2,300	50,800	17,300	98,000	22,580
2018	120,000	54,200	23,100	5,800	38,100	2,300	50,800	17,300	100,000	22,920
2019	120,000	54,200	23,100	5,800	38,100	2,300	50,800	17,300	100,480	23,260
2020	120,000	54,200	23,100	5,800	38,100	2,300	50,800	17,300	100,960	23,600
2021	123,680	54,200	23,100	5,800	38,100	2,300	50,800	17,300	101,440	23,940
2022	127,360	54,200	23,100	5,800	38,100	2,300	50,800	17,300	101,920	24,280
2023	131,040	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,400	24,620
2024	134,720	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	24,960
2025	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	25,300
2026	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	25,640
2027	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	25,980
2028	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	26,320
2029	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	26,660
2030	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	27,000
2031	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	27,360
2032	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	27,720
2033	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,080
2034	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,440
2035	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
TOTAL	5,810,562	2,780,711	1,261,782	253,545	2,068,850	110,527	2,283,475	795,935	3,731,542	1,080,831

c) Devil's Den Water District merged with Castaic Lake Water Agency effective January 1, 1992.

TABLE B-5B  
Annual Water Quantities Delivered to Each Contractor (Continued)

(in acre-feet)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (contd.)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Geronio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]
1962	0	0	0	0	0	0	0	0	0	8,906
1963	0	0	0	0	0	0	0	0	0	12,645
1964	0	0	0	0	0	0	0	0	0	20,911
1965	0	0	0	0	0	0	0	0	0	34,026
1966	0	0	0	0	0	0	0	0	0	54,913
1967	0	0	0	0	0	0	0	0	0	56,763
1968	0	0	0	7,382	0	0	0	0	0	294,457
1969	0	0	0	9,970	0	0	0	0	0	268,104
1970	0	0	0	11,739	0	0	70	70	0	369,459
1971	0	0	0	12,490	0	192	64	256	0	654,442
1972	0	71,938	0	88,028	0	186	505	691	0	1,037,770
1973	0	159,883	0	217,226	0	53	679	732	0	737,532
1974	0	277,717	0	323,334	0	127	648	775	0	878,947
1975	0	526,491	0	583,919	0	253	405	658	0	1,230,830
1976	0	618,451	0	697,468	0	527	382	909	0	1,380,124
1977	0	189,755	0	241,161	0	706	303	1,009	0	582,381
1978	0	507,565	0	601,691	0	579	278	857	0	1,458,733
1979	0	477,074	0	587,476	0	302	329	631	0	1,666,457
1980	0	531,727	0	653,625	0	267	295	562	0	1,530,256
1981	0	795,846	0	951,182	0	221	355	576	0	1,918,563
1982	0	691,192	0	830,771	0	334	305	639	0	1,750,123
1983	0	343,521	0	443,841	0	325	262	587	0	1,187,156
1984	0	454,218	0	566,207	108	177	272	557	0	1,588,008
1985	0	683,625	0	804,576	62	308	254	624	0	1,990,295
1986	0	708,840	0	836,368	328	313	317	958	0	1,999,155
1987	0	712,424	0	853,143	88	459	452	999	0	2,121,607
1988	0	902,564	0	1,047,522	303	385	523	1,211	0	2,376,673
1989	0	1,156,698	0	1,342,686	403	300	486	1,189	0	2,851,371
1990	0	1,396,423	4,836	1,585,808	0	380	574	954	0	2,577,337
1991	0	837,377	3,114	965,866	1,000	600	540	2,140	0	1,132,690
1992	0	1,613,000	5,000	2,105,646	2,200	1,200	1,120	4,520	0	3,659,293
1993	0	1,908,000	5,000	2,219,670	2,400	1,200	1,160	4,760	0	3,778,036
1994	0	1,950,300	5,000	2,275,424	2,700	1,200	1,200	5,100	0	3,841,250
1995	0	1,950,300	5,000	2,282,719	2,900	1,200	1,250	5,350	0	3,857,453
1996	0	2,011,500	15,900	2,364,729	2,880	1,200	1,300	5,380	0	4,014,626
1997	0	2,011,500	16,300	2,370,030	3,160	1,200	1,350	5,710	0	4,023,991
1998	0	2,011,500	16,700	2,375,335	3,440	1,200	1,400	6,040	0	4,031,361
1999	0	2,011,500	17,100	2,380,637	3,720	1,200	1,450	6,370	0	4,038,728
2000	17,300	2,011,500	17,500	2,403,240	4,000	1,200	1,510	6,710	0	4,063,406
2001	17,300	2,011,500	17,838	2,408,065	4,400	27,500	1,570	33,470	0	4,095,957
2002	17,300	2,011,500	18,176	2,412,888	4,800	27,500	1,630	33,930	0	4,102,206
2003	17,300	2,011,500	18,514	2,417,712	5,200	27,500	1,690	34,390	0	4,108,458
2004	17,300	2,011,500	18,852	2,426,536	5,600	27,500	1,750	34,850	0	4,118,706
2005	17,300	2,011,500	19,200	2,435,370	6,000	27,500	1,810	35,310	0	4,128,966
2006	17,300	2,011,500	19,362	2,439,958	6,720	27,500	1,880	36,100	0	4,134,934
2007	17,300	2,011,500	19,524	2,444,546	7,440	27,500	1,950	36,890	0	4,140,902
2008	17,300	2,011,500	19,686	2,449,134	8,160	27,500	2,020	37,680	0	4,146,870
2009	17,300	2,011,500	19,848	2,453,722	8,880	27,500	2,090	38,470	0	4,152,838
2010	17,300	2,011,500	20,000	2,458,300	9,600	27,500	2,160	39,260	0	4,158,796
2011	17,300	2,011,500	20,000	2,462,699	9,600	27,500	2,240	39,340	0	4,163,965
2012	17,300	2,011,500	20,000	2,467,100	9,600	27,500	2,320	39,420	0	4,169,136
2013	17,300	2,011,500	20,000	2,471,500	9,600	27,500	2,410	39,510	0	4,174,316
2014	17,300	2,011,500	20,000	2,473,900	9,600	27,500	2,500	39,600	0	4,177,496
2015	17,300	2,011,500	20,000	2,476,300	9,600	27,500	2,600	39,700	0	4,180,686
2016	17,300	2,011,500	20,000	2,478,640	9,600	27,500	2,700	39,800	0	4,183,726
2017	17,300	2,011,500	20,000	2,480,980	9,600	27,500	2,700	39,800	0	4,186,666
2018	17,300	2,011,500	20,000	2,483,320	9,600	27,500	2,700	39,800	0	4,189,606
2019	17,300	2,011,500	20,000	2,484,140	9,600	27,500	2,700	39,800	0	4,191,026
2020	17,300	2,011,500	20,000	2,484,960	9,600	27,500	2,700	39,800	0	4,192,446
2021	17,300	2,011,500	20,000	2,489,460	9,600	27,500	2,700	39,800	0	4,196,966
2022	17,300	2,011,500	20,000	2,493,960	9,600	27,500	2,700	39,800	0	4,201,486
2023	17,300	2,011,500	20,000	2,498,460	9,600	27,500	2,700	39,800	0	4,206,006
2024	17,300	2,011,500	20,000	2,502,680	9,600	27,500	2,700	39,800	0	4,210,246
2025	17,300	2,011,500	20,000	2,506,700	9,600	27,500	2,700	39,800	0	4,214,286
2026	17,300	2,011,500	20,000	2,507,040	9,600	27,500	2,700	39,800	0	4,214,626
2027	17,300	2,011,500	20,000	2,507,380	9,600	27,500	2,700	39,800	0	4,214,966
2028	17,300	2,011,500	20,000	2,507,720	9,600	27,500	2,700	39,800	0	4,215,306
2029	17,300	2,011,500	20,000	2,508,060	9,600	27,500	2,700	39,800	0	4,215,646
2030	17,300	2,011,500	20,000	2,508,400	9,600	27,500	2,700	39,800	0	4,215,986
2031	17,300	2,011,500	20,000	2,508,760	9,600	27,500	2,700	39,800	0	4,216,346
2032	17,300	2,011,500	20,000	2,509,120	9,600	27,500	2,700	39,800	0	4,216,706
2033	17,300	2,011,500	20,000	2,509,480	9,600	27,500	2,700	39,800	0	4,217,066
2034	17,300	2,011,500	20,000	2,509,840	9,600	27,500	2,700	39,800	0	4,217,426
2035	17,300	2,011,500	20,000	2,510,200	9,600	27,500	2,700	39,800	0	4,217,786
TOTAL	622,800	100,124,929	802,450	121,727,939	336,492	980,294	104,658	1,421,444	0	215,367,328

TABLE B-6  
Annual Water Quantities Conveyed through Each Pumping and Power  
Recovery Plant of Project Transportation Facilities

(in acre-feet)

Sheet 1 of 9

Calendar Year	NORTH BAY AQUEDUCT											
	Barker Slough Pumping Plant				Cordelia Pumping Plant Solano County WA				Cordelia Pumping Plant Napa County FC&WCD			
	Initial Fill Water	Opera- tional Losses	Water Supply Delivery	Total	Initial Fill Water	Opera- tional Losses	Water Supply Delivery	Total	Initial Fill Water	Opera- tional Losses	Water Supply Delivery (a)	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	24	(10)	1,214	1,228
1969	0	0	0	0	0	0	0	0	0	2	2,687	2,689
1970	0	0	0	0	0	0	0	0	0	18	3,618	3,636
1971	0	0	0	0	0	0	0	0	0	4	2,521	2,525
1972	0	0	0	0	0	0	0	0	0	(10)	3,647	3,637
1973	0	0	0	0	0	0	0	0	0	1	3,792	3,793
1974	0	0	0	0	0	0	0	0	0	10	4,870	4,880
1975	0	0	0	0	0	0	0	0	0	10	6,840	6,850
1976	0	0	0	0	0	0	0	0	0	4	7,122	7,126
1977	0	0	0	0	0	0	0	0	0	2	8,226	8,228
1978	0	0	0	0	0	0	0	0	0	(6)	6,034	6,028
1979	0	0	0	0	0	0	0	0	0	1	6,561	6,562
1980	0	0	0	0	0	0	0	0	0	(3)	6,707	6,704
1981	0	0	0	0	0	0	0	0	0	8	9,001	9,009
1982	0	0	0	0	0	0	0	0	0	(8)	1,213	1,205
1983	0	0	0	0	0	0	0	0	0	(12)	2,287	2,275
1984	0	0	0	0	0	0	0	0	0	(15)	2,923	2,908
1985	0	0	0	0	0	0	0	0	0	13	4,039	4,052
1986	0	0	0	0	0	0	0	0	0	(4)	3,515	3,511
1987	0	0	0	0	0	0	0	0	0	0	7,693	7,693
1988	0	(1)	15,118	15,117	0	0	9,726	9,726	0	0	5,392	5,392
1989	0	(4)	21,075	21,071	0	0	17,246	17,246	0	(4)	3,819	3,815
1990	0	(663)	23,954	23,291	0	5	15,173	15,178	0	5	5,506	5,511
1991	0	51	16,272	16,323	0	5	7,896	7,901	0	5	3,372	3,377
1992	0	51	31,327	31,378	0	5	16,450	16,455	0	5	7,157	7,162
1993	0	51	33,906	33,957	0	5	16,530	16,535	0	5	7,776	7,781
1994	0	51	36,426	36,477	0	5	16,930	16,935	0	5	8,346	8,351
1995	0	51	43,084	43,135	0	5	21,580	21,585	0	5	8,834	8,839
1996	0	51	45,730	45,781	0	5	17,746	17,751	0	5	10,414	10,419
1997	0	51	47,465	47,516	0	5	18,152	18,157	0	5	11,073	11,078
1998	0	51	49,200	49,251	0	5	18,558	18,563	0	5	11,732	11,737
1999	0	51	50,935	50,986	0	5	18,964	18,969	0	5	12,391	12,396
2000	0	51	52,670	52,721	0	5	19,370	19,375	0	5	13,050	13,055
2001	0	51	53,636	53,687	0	5	19,696	19,701	0	5	13,640	13,645
2002	0	51	54,602	54,653	0	5	20,022	20,027	0	5	14,230	14,235
2003	0	51	55,568	55,619	0	5	20,348	20,353	0	5	14,820	14,825
2004	0	51	56,534	56,585	0	5	20,674	20,679	0	5	15,410	15,415
2005	0	51	57,500	57,551	0	5	21,000	21,005	0	5	16,000	16,005
2006	0	51	58,090	58,141	0	5	21,000	21,005	0	5	16,540	16,545
2007	0	51	58,680	58,731	0	5	21,000	21,005	0	5	17,080	17,085
2008	0	51	59,270	59,321	0	5	21,000	21,005	0	5	17,620	17,625
2009	0	51	59,860	59,911	0	5	21,000	21,005	0	5	18,160	18,165
2010	0	51	60,450	60,501	0	5	21,000	21,005	0	5	18,700	18,705
2011	0	51	61,140	61,191	0	5	21,000	21,005	0	5	19,340	19,345
2012	0	51	61,830	61,881	0	5	21,000	21,005	0	5	19,980	19,985
2013	0	51	62,520	62,571	0	5	21,000	21,005	0	5	20,620	20,625
2014	0	51	63,210	63,261	0	5	21,000	21,005	0	5	21,260	21,265
2015	0	51	63,900	63,951	0	5	21,000	21,005	0	5	21,900	21,905
2016	0	51	64,590	64,641	0	5	21,000	21,005	0	5	22,540	22,545
2017	0	51	65,280	65,331	0	5	21,000	21,005	0	5	23,180	23,185
2018	0	51	65,970	66,021	0	5	21,000	21,005	0	5	23,820	23,825
2019	0	51	66,660	66,711	0	5	21,000	21,005	0	5	24,460	24,465
2020	0	51	67,350	67,401	0	5	21,000	21,005	0	5	25,100	25,105
2021	0	51	68,040	68,091	0	5	21,000	21,005	0	5	25,740	25,745
2022	0	51	68,730	68,781	0	5	21,000	21,005	0	5	26,380	26,385
2023	0	51	69,420	69,471	0	5	21,000	21,005	0	5	27,020	27,025
2024	0	51	70,110	70,161	0	5	21,000	21,005	0	5	27,660	27,665
2025	0	51	70,800	70,851	0	5	21,000	21,005	0	5	28,300	28,305
2026	0	51	71,490	71,541	0	5	21,000	21,005	0	5	28,940	28,945
2027	0	51	72,180	72,231	0	5	21,000	21,005	0	5	29,580	29,585
2028	0	51	72,870	72,921	0	5	21,000	21,005	0	5	30,220	30,225
2029	0	51	73,560	73,611	0	5	21,000	21,005	0	5	30,860	30,865
2030	0	51	74,250	74,301	0	5	21,000	21,005	0	5	31,500	31,505
2031	0	51	74,940	74,991	0	5	21,000	21,005	0	5	32,140	32,145
2032	0	51	75,630	75,681	0	5	21,000	21,005	0	5	32,780	32,785
2033	0	51	76,320	76,371	0	5	21,000	21,005	0	5	33,420	33,425
2034	0	51	77,010	77,061	0	5	21,000	21,005	0	5	34,060	34,065
2035	0	51	77,700	77,751	0	5	21,000	21,005	0	5	34,700	34,705

a) For the period 1968 through 1987, deliveries are non-SWP water pumped through an interim facility.



TABLE B-6  
Annual Water Quantities Conveyed Through Each Pumping and Power  
Recovery Plant of Project Transportation Facilities (Continued)

(in acre-feet)

Sheet 2 of 9

Calendar Year	SOUTH BAY AQUEDUCT						CALIFORNIA AQUEDUCT								
	South Bay Pumping Plant						North San Joaquin Division Banks Pumping Plant								
	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total	Conser- vation Water	Total	
				Water Supply (b)	Recrea- tion					Water Supply	Recrea- tion				
[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]		
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1962	9	272	0	8,906	0	9,187	0	0	0	0	0	0	0	0	
1963	71	185	0	12,645	0	12,901	0	0	0	0	0	0	0	0	
1964	171	152	0	20,911	0	21,234	0	0	0	0	0	0	0	0	
1965	93	729	0	34,026	0	34,848	0	0	0	0	0	0	0	0	
1966	0	1,746	0	54,913	0	56,659	0	0	0	0	0	0	0	0	
1967	0	1,677	0	56,763	0	58,440	5,746	1,183	0	11,538	0	18,467	2,957	21,424	
1968	0	1,847	0	101,055	0	102,902	11,079	74,464	0	293,243	0	378,786	531,275	910,061	
1969	3,449	2,668	0	69,712	0	75,829	7,336	44,287	0	265,417	0	317,040	531,185	848,225	
1970	16,279	1,086	(5,355)	89,560	0	101,570	23,947	20,767	(5,355)	365,771	0	405,130	(12,995)	392,135	
1971	0	1,815	8,854	98,584	0	109,253	23,207	(10,754)	8,854	851,665	8	672,980	7,708	680,688	
1972	0	3,557	2,273	138,426	0	144,256	145,068	9,057	(4,285)	1,033,432	6,489	1,189,759	48,300	1,238,059	
1973	0	(33)	(1,510)	94,078	0	92,535	214,941	(4,951)	2,902	733,008	1,155	947,055	55,846	1,002,901	
1974	0	1,287	(10,056)	89,318	0	80,549	247,894	(11,526)	(32,510)	873,302	2,118	1,079,278	54,683	1,133,961	
1975	0	320	8,550	93,604	0	102,474	110,149	(8,092)	16,101	1,223,332	3,377	1,344,867	(102,625)	1,242,242	
1976	0	2,431	1,391	126,431	141	130,394	67,834	5,443	(244,124)	1,372,093	1,745	1,202,991	(442,348)	760,643	
1977	0	2,866	2,685	107,704	112	113,367	0	39,897	(157,543)	573,146	1,111	456,611	(13,507)	443,104	
1978	0	2,165	(11,249)	112,574	126	103,616	67,457	(36,898)	35,129	1,451,842	1,177	1,518,707	752,075	2,270,782	
1979	0	2,401	1,069	122,190	89	125,749	17,397	60,958	(32,307)	1,659,265	1,398	1,706,711	(112,053)	1,594,658	
1980	0	1,758	(6,563)	115,824	123	111,142	3,159	58,484	(275,538)	1,529,187	2,131	1,317,423	186,601	1,504,024	
1981	0	2,627	13,742	129,507	121	145,997	46,060	85,350	40,536	1,908,986	4,974	2,085,906	(931,878)	1,154,028	
1982	0	2,344	(23,928)	107,439	129	85,984	5,979	61,556	99,897	1,743,145	4,646	1,915,223	347,983	2,263,206	
1983	0	2,151	(22,886)	94,656	132	74,053	6,071	47,022	(310,477)	1,184,282	7,853	934,751	835,771	1,770,522	
1984	0	2,088	8,442	98,122	158	108,810	38,649	97,143	(108,548)	1,587,936	5,874	1,621,054	21,875	1,642,929	
1985	0	2,817	(1,607)	122,088	152	123,450	0	110,469	137,783	1,985,632	5,452	2,239,336	(110,569)	2,128,767	
1986	0	2,217	319	110,988	130	113,654	0	82,958	37,865	1,993,278	3,865	2,117,966	205,399	2,323,365	
1987	0	2,625	(584)	136,796	137	138,974	0	89,721	(19,167)	2,118,867	7,672	2,197,093	(458,725)	1,738,368	
1988	0	40	0	147,255	142	147,437	0	96,687	(29,826)	2,367,231	4,889	2,438,981	(294,860)	2,144,121	
1989	0	2,706	3,304	142,269	152	148,431	0	88,370	(62,267)	2,829,107	8,612	2,863,822	421,818	3,285,640	
1990	0	(2,963)	1,041	154,406	167	152,651	0	(60,178)	(13,927)	2,552,429	9,261	2,487,585	(454,767)	2,032,818	
1991	0	3,057	(7,449)	81,684	400	77,692	0	79,848	39,107	1,113,478	8,210	1,240,643	356,832	1,597,475	
1992	0	3,171	228	171,900	400	175,699	0	82,864	26,998	3,623,446	8,210	3,741,518	(34,402)	3,707,116	
1993	0	2,877	74	177,400	400	180,751	0	80,815	(71,618)	3,739,370	8,210	3,756,777	105,519	3,862,296	
1994	0	3,438	0	182,000	400	185,838	0	103,808	12,463	3,799,724	8,210	3,924,203	(3,580)	3,920,623	
1995	0	3,395	0	184,000	400	187,795	0	103,616	31,942	3,809,119	8,210	3,952,887	(33,481)	3,919,406	
1996	0	3,337	0	186,001	400	189,738	0	104,546	(20,711)	3,963,516	8,210	4,055,561	153,867	4,209,428	
1997	0	3,299	0	188,000	400	191,699	0	108,965	37,911	3,970,816	8,210	4,125,902	101,426	4,227,328	
1998	0	3,289	0	188,000	400	191,699	0	109,561	22,471	3,976,121	8,210	4,116,363	9,764	4,126,127	
1999	0	3,299	0	188,000	400	191,699	0	109,598	(26,737)	3,981,423	8,210	4,072,494	35,302	4,107,796	
2000	0	3,299	0	188,000	400	191,699	0	109,609	6,710	4,004,026	8,210	4,128,555	(17,333)	4,111,222	
2001	0	3,299	0	188,000	400	191,699	0	109,682	13,395	4,008,851	8,210	4,140,138	(4,774)	4,135,364	
2002	0	3,299	0	188,000	400	191,699	0	109,661	(8,493)	4,013,674	8,210	4,123,052	4,823	4,127,875	
2003	0	3,299	0	188,000	400	191,699	0	109,635	(15,590)	4,018,498	8,210	4,120,753	33,192	4,153,945	
2004	0	3,299	0	188,000	400	191,699	0	109,584	5,373	4,027,322	8,210	4,150,489	(443)	4,150,046	
2005	0	3,299	0	188,000	400	191,699	0	109,633	5,129	4,036,156	8,210	4,159,128	(14,048)	4,145,080	
2006	0	3,299	0	188,000	400	191,699	0	109,886	8,757	4,040,744	8,210	4,167,597	16,384	4,183,981	
2007	0	3,299	0	188,000	400	191,699	0	109,897	(3,886)	4,045,332	8,210	4,159,353	(9,780)	4,149,573	
2008	0	3,299	0	188,000	400	191,699	0	109,694	(2,246)	4,049,920	8,210	4,165,578	8,400	4,173,978	
2009	0	3,299	0	188,000	400	191,699	0	109,952	(754)	4,054,508	8,210	4,171,916	28,746	4,200,662	
2010	0	3,299	0	188,000	400	191,699	0	109,855	1,373	4,059,086	8,210	4,178,524	358	4,178,882	
2011	0	3,299	0	188,000	400	191,699	0	109,923	6,250	4,063,485	8,210	4,187,868	5,334	4,193,202	
2012	0	3,299	0	188,000	400	191,699	0	109,898	986	4,067,886	8,210	4,186,980	(3,352)	4,183,628	
2013	0	3,299	0	188,000	400	191,699	0	110,447	(14,872)	4,072,288	8,210	4,176,071	71,167	4,247,238	
2014	0	3,299	0	188,000	400	191,699	0	110,334	7,304	4,074,686	8,210	4,200,534	(17,257)	4,183,277	
2015	0	3,299	0	188,000	400	191,699	0	109,853	5,474	4,077,086	8,210	4,200,623	(27,871)	4,172,752	
2016	0	3,299	0	188,000	400	191,699	0	109,915	(13,107)	4,079,426	8,210	4,184,444	152	4,184,596	
2017	0	3,299	0	188,000	400	191,699	0	109,597	(853)	4,081,766	8,210	4,198,720	247	4,198,967	
2018	0	3,299	0	188,000	400	191,699	0	109,555	(2,050)	4,084,106	8,210	4,199,821	2,556	4,202,377	
2019	0	3,299	0	188,000	400	191,699	0	109,551	(1,654)	4,084,926	8,210	4,201,033	8,560	4,209,593	
2020	0	3,299	0	188,000	400	191,699	0	109,598	(1,406)	4,085,746	8,210	4,202,148	7,521	4,209,669	
2021	0	3,299	0	188,000	400	191,699	0	109,754	5,491	4,090,246	8,210	4,213,701	9,347	4,223,048	
2022	0	3,299	0	188,000	400	191,699	0	109,915	(5,007)	4,094,746	8,210	4,207,864	45,065	4,252,929	
2023	0	3,299	0	188,000	400	191,699	0	109,910	2,932	4,099,246	8,210	4,220,298	2,716	4,223,014	
2024	0	3,299	0	188,000	400	191,699	0	109,700	2,134	4,103,466	8,210	4,223,510	(40,757)	4,182,753	
2025	0	3,299	0	188,000	400	191,699	0	109,656	(122)	4,107,486	8,210	4,225,230	7,734	4,232,964	
2026	0	3,299	0	188,000	400	191,699	0	109,659	122	4,107,826	8,210	4,225,817	12,592	4,238,409	
2027	0	3,299	0	188,000	400	191,699	0	109,674,							

TABLE B-6

**Annual Water Quantities Conveyed Through Each Pumping and Power  
Recovery Plant of Project Transportation Facilities (Continued)**

(in acre-feet)

Sheet 3 of 9

Calendar  Year	CALIFORNIA AQUEDUCT											
	San Luis Division						South San Joaquin Division					
	Dos Amigos Pumping Plant						Buena Vista Pumping Plant					
	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total
				Water Supply	Recrea- tion					Water Supply	Recrea- tion	
[27]	[28]	[29]	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	
1961	0	0	0	0	0	0	0	0	0	0	0	
1962	0	0	0	0	0	0	0	0	0	0	0	
1963	0	0	0	0	0	0	0	0	0	0	0	
1964	0	0	0	0	0	0	0	0	0	0	0	
1965	0	0	0	0	0	0	0	0	0	0	0	
1966	0	0	0	0	0	0	0	0	0	0	0	
1967	0	0	0	0	0	0	0	0	0	0	0	
1968	11,079	25,126	0	189,104	0	225,309	0	0	0	0	0	
1969	3,887	9,922	0	192,689	0	206,498	0	0	0	0	0	
1970	7,668	1,901	0	270,300	0	279,869	4,779	1,012	0	3	5,794	
1971	23,207	(12,030)	0	545,869	0	557,046	7,853	8,399	0	101,512	0 117,764	
1972	145,066	(6,635)	(6,558)	886,840	6,481	1,025,194	100,274	20,044	(6,558)	223,626	6,481 343,867	
1973	214,941	(6,778)	1,329	635,716	1,147	846,355	204,638	35,695	1,329	311,096	1,147 553,905	
1974	247,894	(16,765)	(15,295)	780,513	2,108	998,455	237,554	19,672	(15,295)	388,949	2,108 632,988	
1975	110,149	(12,144)	(693)	1,126,152	3,358	1,226,822	103,352	26,342	(693)	672,531	3,358 804,890	
1976	67,834	(456)	(152,171)	1,241,550	1,581	1,158,338	61,122	29,428	(152,171)	785,055	1,581 725,015	
1977	0	26,359	(116,219)	463,970	737	374,847	0	25,173	(116,219)	271,944	560 181,458	
1978	67,457	1,905	79,308	1,335,362	680	1,484,712	65,027	17,751	121,904	762,043	674 967,399	
1979	17,397	33,884	(51,299)	1,530,926	685	1,531,593	12,302	46,157	(51,299)	737,714	502 745,376	
1980	3,159	34,391	(272,825)	1,407,663	1,514	1,173,902	0	49,025	(134,009)	778,059	1,262 694,337	
1981	46,060	36,962	23,359	1,775,179	4,348	1,885,908	0	38,942	23,359	1,077,322	4,112 1,143,735	
1982	5,979	57,146	116,086	1,631,868	4,205	1,815,284	0	29,059	117,174	990,863	4,045 1,141,141	
1983	6,071	63,583	(101,155)	1,085,804	7,475	1,061,778	0	40,205	(101,155)	593,920	7,291 540,261	
1984	38,649	109,263	(112,744)	1,484,114	5,391	1,524,673	0	38,487	(114,984)	781,955	5,244 710,702	
1985	0	86,772	138,896	1,858,111	4,936	2,088,717	0	42,838	139,689	992,606	4,804 1,179,937	
1986	0	49,378	37,546	1,877,183	3,426	1,967,533	0	45,343	37,546	1,014,294	3,285 1,100,468	
1987	0	63,289	(23,086)	1,976,446	7,121	2,023,770	0	28,829	(22,959)	1,017,361	6,937 1,030,168	
1988	0	64,333	(29,747)	2,215,564	4,490	2,254,640	0	30,067	(29,747)	1,244,184	4,360 1,248,864	
1989	0	60,769	(67,943)	2,679,845	8,129	2,680,800	0	38,859	(65,515)	1,532,625	7,967 1,513,936	
1990	0	(67,298)	(14,968)	2,394,901	8,922	2,321,557	0	(35,942)	(14,968)	1,769,993	8,879 1,727,962	
1991	0	63,730	48,556	1,031,794	7,120	1,149,200	0	42,046	46,556	970,816	7,010 1,066,428	
1992	0	66,632	26,770	3,445,846	7,120	3,546,368	0	44,948	26,770	2,212,116	7,010 2,290,844	
1993	0	64,877	(71,692)	3,556,270	7,120	3,556,575	0	43,155	(71,692)	2,322,540	7,010 2,301,013	
1994	0	61,938	12,463	3,612,024	7,120	3,693,545	0	40,042	12,463	2,378,294	7,010 2,437,809	
1995	0	62,215	31,942	3,619,319	7,120	3,720,596	0	40,319	31,942	2,385,589	7,010 2,464,860	
1996	0	62,272	(20,711)	3,771,815	7,120	3,820,496	0	40,376	(20,711)	2,577,029	7,010 2,603,704	
1997	0	62,252	37,911	3,777,116	7,120	3,884,399	0	40,356	37,911	2,582,330	7,010 2,667,607	
1998	0	62,702	22,471	3,782,421	7,120	3,874,714	0	40,806	22,471	2,587,635	7,010 2,657,922	
1999	0	62,776	(26,737)	3,787,723	7,120	3,830,882	0	40,880	(26,737)	2,592,937	7,010 2,614,090	
2000	0	62,695	6,710	3,810,326	7,120	3,886,851	0	40,799	6,710	2,615,540	7,010 2,670,059	
2001	0	62,765	13,395	3,815,151	7,120	3,898,431	0	40,869	13,395	2,620,365	7,010 2,681,639	
2002	0	62,798	(8,493)	3,819,974	7,120	3,881,399	0	40,902	(8,493)	2,625,188	7,010 2,664,607	
2003	0	62,822	(15,590)	3,824,798	7,120	3,879,150	0	40,926	(15,590)	2,630,012	7,010 2,662,358	
2004	0	62,753	5,373	3,833,622	7,120	3,908,868	0	40,857	5,373	2,638,836	7,010 2,692,076	
2005	0	62,659	5,129	3,842,456	7,120	3,917,364	0	40,763	5,129	2,647,670	7,010 2,700,572	
2006	0	62,792	8,757	3,847,044	7,120	3,925,713	0	40,896	8,757	2,652,258	7,010 2,708,921	
2007	0	62,679	(3,886)	3,851,632	7,120	3,917,545	0	40,783	(3,886)	2,656,846	7,010 2,700,753	
2008	0	62,692	(2,246)	3,856,220	7,120	3,923,786	0	40,796	(2,246)	2,661,434	7,010 2,706,994	
2009	0	62,668	(754)	3,860,808	7,120	3,929,842	0	40,772	(754)	2,666,022	7,010 2,713,050	
2010	0	62,681	1,373	3,865,386	7,120	3,936,560	0	40,785	1,373	2,670,600	7,010 2,719,768	
2011	0	62,723	6,250	3,869,785	7,120	3,945,878	0	40,827	6,250	2,674,999	7,010 2,729,086	
2012	0	62,817	986	3,874,186	7,120	3,945,109	0	40,921	986	2,679,400	7,010 2,728,317	
2013	0	62,824	(14,872)	3,878,586	7,120	3,933,658	0	40,928	(14,872)	2,683,800	7,010 2,716,866	
2014	0	62,821	7,304	3,880,986	7,120	3,958,231	0	40,925	7,304	2,686,200	7,010 2,741,439	
2015	0	62,684	5,474	3,883,386	7,120	3,958,664	0	40,788	5,474	2,688,600	7,010 2,741,872	
2016	0	62,685	(13,107)	3,885,726	7,120	3,942,424	0	40,789	(13,107)	2,690,940	7,010 2,725,632	
2017	0	62,749	(853)	3,888,066	7,120	3,957,082	0	40,853	(853)	2,693,280	7,010 2,740,290	
2018	0	62,701	(2,050)	3,890,406	7,120	3,958,177	0	40,805	(2,050)	2,695,620	7,010 2,741,385	
2019	0	62,685	(1,654)	3,891,226	7,120	3,959,377	0	40,789	(1,654)	2,696,440	7,010 2,742,585	
2020	0	62,661	(1,406)	3,892,046	7,120	3,960,421	0	40,765	(1,406)	2,697,260	7,010 2,743,629	
2021	0	62,675	5,491	3,896,546	7,120	3,971,832	0	40,779	5,491	2,701,760	7,010 2,755,040	
2022	0	62,719	(5,007)	3,901,046	7,120	3,965,878	0	40,823	(5,007)	2,706,280	7,010 2,749,086	
2023	0	62,712	2,932	3,905,546	7,120	3,978,310	0	40,816	2,932	2,710,760	7,010 2,761,518	
2024	0	62,767	2,134	3,909,766	7,120	3,981,787	0	40,871	2,134	2,714,980	7,010 2,764,995	
2025	0	62,763	(122)	3,913,786	7,120	3,983,547	0	40,867	(122)	2,719,000	7,010 2,766,755	
2026	0	62,773	122	3,914,126	7,120	3,984,141	0	40,877	122	2,719,340	7,010 2,767,349	
2027	0	62,752	(1,700)	3,914,466	7,120	3,982,638	0	40,856	(1,700)	2,719,680	7,010 2,765,846	
2028	0	62,762	4,065	3,914,806	7,120	3,988,753	0	40,866	4,065	2,720,020	7,010 2,771,961	
2029	0	62,751	(4,789)	3,915,146	7,120	3,980,228	0	40,855	(4,789)	2,720,360	7,010 2,763,436	
2030	0	62,760	3,417	3,915,486	7,120	3,988,783	0	40,864	3,417	2,720,700	7,010 2,771,991	
2031	0	62,796	1,298	3,915,846	7,120	3,987,060	0	40,900	1,298	2,721,060	7,010 2,770,268	
2032	0	62,773	(3,773)	3,916,206	7,120	3,982,326	0	40,877	(3,773)	2,721,420	7,010 2,765,534	
2033	0	62,752	(586)	3,916,566	7,120	3,985,852	0	40,856	(586)	2,721,780	7,010 2,769,060	
2034	0	62,776	1,808	3,916,926	7,120	3,988,630	0	40,880	1,808	2,722,140	7,010 2,771,838	
2035	0	62,262	(60,477)	3,917,286	7,120	3,926,191	0	40,366	(60,477)	2,722,500	7,010 2,709,399	

TABLE B-6

**Annual Water Quantities Conveyed Through Each Pumping and Power  
Recovery Plant of Project Transportation Facilities (Continued)**

(in acre-feet)

Sheet 4 of 9

Calendar  Year	CALIFORNIA AQUEDUCT (continued)											
	South San Joaquin Division (continued)											
	Wheeler Ridge Pumping Plant						Chrisman Pumping Plant					
	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total
				Water Supply	Recrea- tion					Water Supply	Recrea- tion	
[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]	[47]	[48]	[49]	[50]	
1961	0	0	0	0	0	0	0	0	0	0	0	
1962	0	0	0	0	0	0	0	0	0	0	0	
1963	0	0	0	0	0	0	0	0	0	0	0	
1964	0	0	0	0	0	0	0	0	0	0	0	
1965	0	0	0	0	0	0	0	0	0	0	0	
1966	0	0	0	0	0	0	0	0	0	0	0	
1967	0	0	0	0	0	0	0	0	0	0	0	
1968	0	0	0	0	0	0	0	0	0	0	0	
1969	0	2	0	0	0	0	0	0	0	0	0	
1970	198	2	0	0	0	200	0	0	0	0	0	
1971	7,533	(112)	0	3,552	0	10,973	7,366	(159)	0	0	7,207	
1972	100,274	12,765	(6,558)	84,955	6,481	197,917	100,274	13,160	(6,558)	78,891	6,481	192,248
1973	204,638	21,543	1,329	229,685	1,147	458,342	204,638	32,414	1,329	209,769	1,147	449,297
1974	237,554	11,843	(15,295)	336,198	2,108	572,408	237,554	17,655	(15,295)	318,198	2,108	560,220
1975	103,352	19,763	(693)	621,706	3,358	747,486	103,352	25,326	(693)	586,286	3,358	717,629
1976	61,122	18,552	(152,171)	740,486	1,581	669,570	61,122	21,468	(152,171)	700,935	1,581	632,935
1977	0	16,415	(116,219)	246,349	560	147,105	0	15,698	(116,219)	240,191	560	140,230
1978	65,027	28,820	121,904	631,121	674	847,546	65,027	26,705	121,904	599,973	674	814,283
1979	12,302	50,663	(51,299)	625,561	502	837,729	12,302	50,580	(51,299)	586,959	502	599,044
1980	0	48,825	(134,009)	696,405	1,262	612,483	0	58,085	(134,009)	658,588	1,262	583,926
1981	0	51,600	23,359	998,307	4,112	1,077,378	0	48,844	23,359	959,274	4,112	1,035,589
1982	0	44,353	117,332	878,486	4,045	1,044,216	0	33,541	117,277	830,704	4,045	985,567
1983	0	43,961	(101,155)	487,915	7,291	438,012	0	34,698	(101,155)	450,489	7,291	391,323
1984	0	45,999	(115,088)	632,262	5,244	568,417	0	33,132	(115,092)	582,414	5,244	505,698
1985	0	50,106	139,973	854,684	4,804	1,049,567	0	54,631	139,954	810,806	4,804	1,010,195
1986	0	47,369	37,546	882,300	3,285	970,500	0	50,047	37,546	839,839	3,285	930,717
1987	0	46,445	(23,255)	887,905	6,937	918,032	0	31,888	23,318	853,157	6,937	915,300
1988	0	45,078	(29,747)	1,097,631	4,360	1,117,322	0	31,038	(29,747)	1,055,637	4,360	1,061,288
1989	0	58,540	(65,702)	1,382,599	7,967	1,383,404	0	51,702	(65,645)	1,339,358	7,967	1,333,382
1990	0	(55,607)	(14,968)	1,627,248	8,879	1,565,552	0	(45,482)	(14,968)	1,590,895	8,879	1,539,324
1991	0	38,416	46,556	970,372	7,010	1,062,354	0	38,166	46,556	970,342	7,010	1,062,074
1992	0	41,318	26,770	2,041,845	7,010	2,116,943	0	41,068	26,770	1,991,852	7,010	2,066,700
1993	0	39,525	(71,692)	2,152,269	7,010	2,127,112	0	39,275	(71,692)	2,102,276	7,010	2,076,869
1994	0	36,412	12,463	2,208,023	7,010	2,263,908	0	36,162	12,463	2,158,030	7,010	2,213,665
1995	0	36,689	31,942	2,215,318	7,010	2,290,959	0	36,439	31,942	2,165,325	7,010	2,240,716
1996	0	36,746	(20,711)	2,417,154	7,010	2,440,199	0	36,496	(20,711)	2,372,079	7,010	2,394,874
1997	0	36,726	37,911	2,422,455	7,010	2,504,102	0	36,476	37,911	2,377,380	7,010	2,458,777
1998	0	37,176	22,471	2,427,760	7,010	2,494,417	0	36,926	22,471	2,382,685	7,010	2,449,092
1999	0	37,250	(26,737)	2,433,062	7,010	2,450,585	0	37,000	(26,737)	2,387,987	7,010	2,405,260
2000	0	37,169	6,710	2,455,665	7,010	2,506,554	0	36,919	6,710	2,410,590	7,010	2,461,229
2001	0	37,239	13,395	2,460,490	7,010	2,518,134	0	36,989	13,395	2,415,415	7,010	2,472,809
2002	0	37,272	(8,493)	2,465,313	7,010	2,501,102	0	37,022	(8,493)	2,420,238	7,010	2,455,777
2003	0	37,296	(15,590)	2,470,137	7,010	2,498,853	0	37,046	(15,590)	2,425,062	7,010	2,453,528
2004	0	37,227	5,373	2,478,961	7,010	2,528,571	0	36,977	5,373	2,433,886	7,010	2,483,246
2005	0	37,133	5,129	2,487,795	7,010	2,537,067	0	36,883	5,129	2,442,720	7,010	2,491,742
2006	0	37,266	8,757	2,492,383	7,010	2,545,416	0	37,016	8,757	2,447,308	7,010	2,500,091
2007	0	37,153	(3,886)	2,496,971	7,010	2,537,248	0	36,903	(3,886)	2,451,896	7,010	2,491,923
2008	0	37,166	(2,246)	2,501,559	7,010	2,543,489	0	36,916	(2,246)	2,456,484	7,010	2,498,164
2009	0	37,142	(754)	2,506,147	7,010	2,549,545	0	36,892	(754)	2,461,072	7,010	2,504,220
2010	0	37,155	1,373	2,510,725	7,010	2,556,263	0	36,905	1,373	2,465,650	7,010	2,510,938
2011	0	37,197	6,250	2,515,124	7,010	2,565,581	0	36,947	6,250	2,470,049	7,010	2,520,256
2012	0	37,291	986	2,519,525	7,010	2,564,812	0	37,041	986	2,474,450	7,010	2,519,487
2013	0	37,298	(14,872)	2,523,925	7,010	2,553,361	0	37,048	(14,872)	2,478,850	7,010	2,508,036
2014	0	37,295	7,304	2,526,325	7,010	2,577,934	0	37,045	7,304	2,481,250	7,010	2,532,609
2015	0	37,158	5,474	2,528,725	7,010	2,578,367	0	36,908	5,474	2,483,650	7,010	2,533,042
2016	0	37,159	(13,107)	2,531,065	7,010	2,562,127	0	36,909	(13,107)	2,485,990	7,010	2,516,802
2017	0	37,223	(853)	2,533,405	7,010	2,576,785	0	36,973	(853)	2,488,330	7,010	2,531,460
2018	0	37,175	(2,050)	2,535,745	7,010	2,577,880	0	36,925	(2,050)	2,490,670	7,010	2,532,555
2019	0	37,159	(1,654)	2,536,565	7,010	2,579,080	0	36,909	(1,654)	2,491,490	7,010	2,533,755
2020	0	37,135	(1,406)	2,537,385	7,010	2,580,124	0	36,885	(1,406)	2,492,310	7,010	2,534,799
2021	0	37,149	5,491	2,541,885	7,010	2,591,535	0	36,899	5,491	2,496,810	7,010	2,546,210
2022	0	37,193	(5,007)	2,546,385	7,010	2,585,581	0	36,943	(5,007)	2,501,310	7,010	2,540,256
2023	0	37,186	2,932	2,550,885	7,010	2,598,013	0	36,936	2,932	2,505,810	7,010	2,552,688
2024	0	37,241	2,134	2,555,105	7,010	2,601,490	0	36,991	2,134	2,510,030	7,010	2,556,165
2025	0	37,237	(122)	2,559,125	7,010	2,603,250	0	36,987	(122)	2,514,050	7,010	2,557,925
2026	0	37,247	122	2,559,465	7,010	2,603,844	0	36,997	122	2,514,390	7,010	2,558,519
2027	0	37,226	(1,700)	2,559,805	7,010	2,602,341	0	36,976	(1,700)	2,514,730	7,010	2,557,016
2028	0	37,236	4,065	2,560,145	7,010	2,608,456	0	36,986	4,065	2,515,070	7,010	2,563,131
2029	0	37,225	(4,789)	2,560,485	7,010	2,599,931	0	36,975	(4,789)	2,515,410	7,010	2,554,606
2030	0	37,234	3,417	2,560,825	7,010	2,608,486	0	36,984	3,417	2,515,750	7,010	2,563,161
2031	0	37,270	1,298	2,561,185	7,010	2,606,763	0	37,020	1,298	2,516,110	7,010	2,561,438
2032	0	37,247	(3,773)	2,561,545	7,010	2,602,029	0	36,997	(3,773)	2,516,470	7,010	2,556,704
2033	0	37,226	(586)	2,561,905	7,010	2,605,555	0	36,976	(586)	2,516,830	7,010	2,560,230
2034	0	37,250	1,808	2,562,265	7,010	2,608,333	0	37,000	1,808	2,517,190	7,010	2,563,008
2035	0	36,736	(60,477)	2,562,625	7,010	2,545,894	0	36,486	(60,477)	2,517,550	7,010	2,500,569

TABLE B-6  
Annual Water Quantities Conveyed Through Each Pumping and Power  
Recovery Plant of Project Transportation Facilities (Continued)

(in acre-feet)

Sheet 5 of 9

Calendar  Year	CALIFORNIA AQUEDUCT (continued)											
	Tehachapi Division						Mojave Division					
	Edmonston Pumping Plant						Alamo Powerplant					
	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total
				Water Supply	Recrea- tion					Water Supply	Recrea- tion	
[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]	
1961	0	0	0	0	0	0	0	0	0	0	0	
1962	0	0	0	0	0	0	0	0	0	0	0	
1963	0	0	0	0	0	0	0	0	0	0	0	
1964	0	0	0	0	0	0	0	0	0	0	0	
1965	0	0	0	0	0	0	0	0	0	0	0	
1966	0	0	0	0	0	0	0	0	0	0	0	
1967	0	0	0	0	0	0	0	0	0	0	0	
1968	0	0	0	0	0	0	0	0	0	0	0	
1969	0	0	0	0	0	0	0	0	0	0	0	
1970	0	0	0	0	0	0	0	0	0	0	0	
1971	5,446	8	0	0	0	5,454	0	0	0	0	0	
1972	100,274	16,067	(6,558)	74,123	6,481	190,387	0	0	0	0	0	
1973	204,638	34,051	1,329	207,808	1,147	448,973	0	0	0	0	0	
1974	237,554	18,181	(15,295)	313,634	2,108	556,182	0	0	0	0	0	
1975	103,352	20,183	(693)	573,219	3,358	699,419	0	0	0	0	0	
1976	61,122	21,096	(152,171)	685,768	1,581	617,396	0	0	0	0	0	
1977	0	18,424	(116,219)	236,086	560	138,851	0	0	0	0	0	
1978	65,027	20,887	121,904	590,329	674	798,821	0	0	0	0	0	
1979	12,302	46,332	(51,299)	568,338	502	576,175	0	0	0	0	0	
1980	0	52,967	(134,009)	639,743	1,262	559,963	0	0	0	0	0	
1981	0	40,602	23,359	938,482	4,112	1,006,555	0	0	0	0	0	
1982	0	37,244	117,296	812,206	4,045	970,791	0	0	0	0	0	
1983	0	40,690	(101,155)	431,182	7,291	378,008	0	0	0	0	0	
1984	0	42,112	(115,214)	556,830	5,244	488,972	0	0	0	0	0	
1985	0	45,265	139,988	792,477	4,804	982,534	0	0	0	0	0	
1986	0	38,514	37,546	823,067	3,285	902,412	0	14,898	12,258	429,864	1,508	
1987	0	28,213	(23,258)	841,322	6,937	853,214	0	11,365	(13,727)	407,870	1,239	
1988	0	33,280	(29,747)	1,044,725	4,360	1,052,618	0	12,956	1,101	537,559	971	
1989	0	41,730	(65,710)	1,328,041	7,967	1,312,028	0	42,055	(65,705)	716,360	1,407	
1990	0	(30,943)	(14,968)	1,579,468	0	1,533,557	0	1,053	(6,221)	788,123	1,388	
1991	0	36,616	46,556	968,666	7,010	1,058,848	0	21,741	10,553	532,025	1,630	
1992	0	39,518	26,770	1,976,546	7,010	2,049,844	0	22,514	(31,484)	1,087,546	1,630	
1993	0	37,725	(71,692)	2,086,970	7,010	2,060,013	0	22,763	3,375	1,101,920	1,630	
1994	0	34,612	12,463	2,142,724	7,010	2,196,809	0	20,590	(1,674)	1,153,774	1,630	
1995	0	34,889	31,942	2,150,019	7,010	2,223,860	0	20,595	(1,275)	1,157,254	1,630	
1996	0	34,946	(20,711)	2,352,029	7,010	2,373,274	0	20,450	(6,468)	1,315,929	1,630	
1997	0	34,926	37,911	2,357,330	7,010	2,437,177	0	20,368	(17,305)	1,320,830	1,630	
1998	0	35,376	22,471	2,362,835	7,010	2,427,492	0	20,403	24,952	1,325,735	1,630	
1999	0	35,450	(26,737)	2,367,937	7,010	2,383,660	0	20,456	(29,912)	1,330,637	1,630	
2000	0	35,369	6,710	2,390,540	7,010	2,439,629	0	20,413	7,768	1,352,840	1,630	
2001	0	35,439	13,395	2,395,365	7,010	2,451,209	0	20,505	11,690	1,357,327	1,630	
2002	0	35,472	(8,493)	2,400,188	7,010	2,434,177	0	20,550	(4,672)	1,361,812	1,630	
2003	0	35,496	(15,590)	2,405,012	7,010	2,431,928	0	20,552	(16,160)	1,366,298	1,630	
2004	0	35,427	5,373	2,413,836	7,010	2,461,646	0	20,501	4,081	1,374,784	1,630	
2005	0	35,333	5,129	2,422,670	7,010	2,470,142	0	20,389	3,494	1,383,270	1,630	
2006	0	35,466	8,757	2,427,258	7,010	2,478,491	0	20,540	4,704	1,387,696	1,630	
2007	0	35,353	(3,886)	2,431,846	7,010	2,470,323	0	20,406	1,124	1,392,122	1,630	
2008	0	35,366	(2,246)	2,436,434	7,010	2,476,564	0	20,400	(3,828)	1,396,548	1,630	
2009	0	35,342	(754)	2,441,022	7,010	2,482,620	0	20,377	215	1,400,974	1,630	
2010	0	35,355	1,373	2,445,600	7,010	2,489,338	0	20,498	2,816	1,405,400	1,630	
2011	0	35,397	6,250	2,449,999	7,010	2,498,656	0	20,488	6,034	1,409,799	1,630	
2012	0	35,491	986	2,454,400	7,010	2,497,887	0	20,585	1,721	1,414,200	1,630	
2013	0	35,498	(14,872)	2,458,800	7,010	2,486,436	0	20,641	(13,827)	1,418,600	1,630	
2014	0	35,495	7,304	2,461,200	7,010	2,511,009	0	20,818	7,730	1,421,000	1,630	
2015	0	35,358	5,474	2,463,600	7,010	2,511,442	0	20,456	4,828	1,423,400	1,630	
2016	0	35,359	(13,107)	2,465,940	7,010	2,495,202	0	20,449	(12,773)	1,425,740	1,630	
2017	0	35,423	(853)	2,468,280	7,010	2,509,860	0	20,513	(2,322)	1,428,080	1,630	
2018	0	35,375	(2,050)	2,470,620	7,010	2,510,955	0	20,463	(1,003)	1,430,420	1,630	
2019	0	35,359	(1,654)	2,471,440	7,010	2,512,155	0	20,478	(776)	1,431,240	1,630	
2020	0	35,335	(1,406)	2,472,260	7,010	2,513,199	0	20,438	(1,164)	1,432,060	1,630	
2021	0	35,349	5,491	2,476,760	7,010	2,524,810	0	20,449	5,169	1,436,560	1,630	
2022	0	35,393	(5,007)	2,481,260	7,010	2,518,656	0	20,499	(5,075)	1,441,060	1,630	
2023	0	35,386	2,932	2,485,760	7,010	2,531,088	0	20,487	2,248	1,445,560	1,630	
2024	0	35,441	2,134	2,489,980	7,010	2,534,565	0	20,617	5,483	1,449,780	1,630	
2025	0	35,437	(122)	2,494,000	7,010	2,536,325	0	20,603	(3,698)	1,453,800	1,630	
2026	0	35,447	122	2,494,340	7,010	2,536,919	0	20,584	(154)	1,454,140	1,630	
2027	0	35,428	(1,700)	2,494,680	7,010	2,535,416	0	20,587	850	1,454,480	1,630	
2028	0	35,436	4,065	2,495,020	7,010	2,541,531	0	20,594	1,453	1,454,820	1,630	
2029	0	35,425	(4,789)	2,495,360	7,010	2,533,006	0	20,588	(1,870)	1,455,160	1,630	
2030	0	35,434	3,417	2,495,700	7,010	2,541,561	0	20,594	807	1,455,500	1,630	
2031	0	35,470	1,298	2,496,060	7,010	2,539,838	0	20,593	1,369	1,455,860	1,630	
2032	0	35,447	(3,773)	2,496,420	7,010	2,535,104	0	20,601	(2,458)	1,456,220	1,630	
2033	0	35,426	(586)	2,496,780	7,010	2,538,630	0	20,576	(1,468)	1,456,580	1,630	
2034	0	35,450	1,808	2,497,140	7,010	2,541,408	0	20,580	2,645	1,456,940	1,630	
2035	0	34,936	(60,477)	2,497,500	7,010	2,478,969	0	20,395	19,716	1,457,300	1,630	

TABLE B-6

**Annual Water Quantities Conveyed Through Each Pumping and Power  
Recovery Plant of Project Transportation Facilities (Continued)**

(in acre-feet)

Sheet 6 of 9

Calendar  Year	CALIFORNIA AQUEDUCT (continued)											
	Mojave Division (continued)											
	Pearblossom Pumping Plant						Mojave Siphon Powerplant					
	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total
Water Supply				Recrea- tion	Water Supply					Recrea- tion		
	[63]	[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0
1971	21	0	0	0	0	21	0	0	0	0	0	0
1972	35,243	5,282	(153)	1,794	0	42,166	0	0	0	0	0	0
1973	80,177	21,522	(2,700)	52,201	72	151,272	0	0	0	0	0	0
1974	76,694	10,847	(11,149)	102,839	44	179,275	0	0	0	0	0	0
1975	10,000	2,364	(8,397)	190,351	70	194,388	0	0	0	0	0	0
1976	4,168	7,040	(16,055)	236,713	152	232,018	0	0	0	0	0	0
1977	0	11,398	(17,534)	102,326	580	96,770	0	0	0	0	0	0
1978	19,922	5,696	69,130	374,845	498	470,091	0	0	0	0	0	0
1979	12,302	6,836	(32,518)	362,114	502	349,236	0	0	0	0	0	0
1980	0	16,200	6,159	401,214	781	424,354	0	0	0	0	0	0
1981	0	4,992	(36,278)	574,573	933	544,220	0	0	0	0	0	0
1982	0	5,251	55,232	401,037	1,919	463,439	0	0	0	0	0	0
1983	0	11,745	(26,847)	231,188	1,180	217,266	0	0	0	0	0	0
1984	0	18,228	23,230	252,066	1,494	295,018	0	0	0	0	0	0
1985	0	25,292	(2,815)	350,758	1,076	374,311	0	0	0	0	0	0
1986	0	31,039	12,258	394,156	1,508	438,961	0	0	0	0	0	0
1987	0	27,319	(14,928)	367,531	1,239	381,161	0	0	0	0	0	0
1988	0	23,469	1,101	501,291	971	526,832	0	0	0	0	0	0
1989	0	66,107	(62,895)	661,189	1,407	665,806	0	0	0	0	0	0
1990	0	(28,913)	(6,221)	730,559	1,388	696,813	0	0	0	0	0	0
1991	0	16,391	10,553	501,650	1,430	530,024	0	0	0	0	0	0
1992	0	17,164	(31,484)	1,003,590	1,430	990,700	0	0	0	0	0	0
1993	0	17,413	3,375	1,013,735	1,430	1,035,953	0	0	0	0	0	0
1994	0	15,240	(1,674)	1,062,175	1,430	1,077,171	0	11,770	(1,674)	1,062,175	1,430	1,073,701
1995	0	15,245	(1,275)	1,062,320	1,430	1,077,720	0	11,775	(1,275)	1,062,320	1,430	1,074,250
1996	0	15,100	(6,468)	1,213,928	1,430	1,223,990	0	11,630	(6,468)	1,163,128	1,430	1,169,720
1997	0	15,018	(17,305)	1,214,431	1,430	1,213,574	0	11,548	(17,305)	1,163,631	1,430	1,159,304
1998	0	15,053	24,952	1,214,934	1,430	1,256,369	0	11,583	24,952	1,164,134	1,430	1,202,099
1999	0	15,106	(29,912)	1,215,437	1,430	1,202,061	0	11,836	(29,912)	1,164,637	1,430	1,147,791
2000	0	15,063	7,768	1,233,240	1,430	1,257,501	0	11,593	7,768	1,182,440	1,430	1,203,231
2001	0	15,155	11,690	1,233,726	1,430	1,262,001	0	11,685	11,690	1,182,926	1,430	1,207,731
2002	0	15,200	(4,672)	1,234,212	1,430	1,246,170	0	11,730	(4,672)	1,183,412	1,430	1,191,900
2003	0	15,202	(16,160)	1,234,698	1,430	1,235,170	0	11,732	(16,160)	1,183,898	1,430	1,180,900
2004	0	15,151	4,081	1,239,184	1,430	1,259,846	0	11,681	4,081	1,188,384	1,430	1,205,576
2005	0	15,039	3,494	1,243,670	1,430	1,263,633	0	11,569	3,494	1,192,870	1,430	1,209,363
2006	0	15,190	4,704	1,248,096	1,430	1,269,420	0	11,720	4,704	1,197,296	1,430	1,215,150
2007	0	15,056	1,124	1,252,522	1,430	1,270,132	0	11,586	1,124	1,201,722	1,430	1,215,862
2008	0	15,050	(3,828)	1,256,948	1,430	1,269,600	0	11,580	(3,828)	1,206,148	1,430	1,215,330
2009	0	15,027	215	1,261,374	1,430	1,278,046	0	11,557	215	1,210,574	1,430	1,223,776
2010	0	15,146	2,816	1,265,800	1,430	1,285,192	0	11,676	2,816	1,215,000	1,430	1,230,922
2011	0	15,138	6,034	1,270,200	1,430	1,292,802	0	11,668	6,034	1,219,400	1,430	1,238,532
2012	0	15,235	1,721	1,274,600	1,430	1,292,986	0	11,765	1,721	1,223,800	1,430	1,238,716
2013	0	15,291	(13,827)	1,279,000	1,430	1,281,894	0	11,821	(13,827)	1,228,200	1,430	1,227,624
2014	0	15,268	7,730	1,281,400	1,430	1,305,828	0	11,798	7,730	1,230,600	1,430	1,251,558
2015	0	15,106	4,828	1,283,600	1,430	1,305,164	0	11,636	4,828	1,233,000	1,430	1,250,894
2016	0	15,099	(12,773)	1,286,140	1,430	1,289,896	0	11,629	(12,773)	1,235,340	1,430	1,235,626
2017	0	15,163	(2,322)	1,288,480	1,430	1,302,751	0	11,693	(2,322)	1,237,680	1,430	1,248,481
2018	0	15,113	(1,003)	1,290,820	1,430	1,306,360	0	11,643	(1,003)	1,240,020	1,430	1,252,090
2019	0	15,128	(776)	1,291,640	1,430	1,307,422	0	11,658	(776)	1,240,840	1,430	1,253,152
2020	0	15,088	(1,164)	1,292,460	1,430	1,307,814	0	11,618	(1,164)	1,241,660	1,430	1,253,544
2021	0	15,099	5,169	1,293,280	1,430	1,314,978	0	11,629	5,169	1,242,480	1,430	1,260,708
2022	0	15,149	(5,075)	1,294,100	1,430	1,305,604	0	11,679	(5,075)	1,243,300	1,430	1,251,334
2023	0	15,137	2,248	1,294,920	1,430	1,313,735	0	11,667	2,248	1,244,120	1,430	1,259,465
2024	0	15,267	5,483	1,295,460	1,430	1,317,640	0	11,797	5,483	1,244,660	1,430	1,263,370
2025	0	15,253	(3,698)	1,295,800	1,430	1,308,785	0	11,783	(3,698)	1,245,000	1,430	1,254,515
2026	0	15,234	(154)	1,296,140	1,430	1,312,650	0	11,764	(154)	1,245,340	1,430	1,258,380
2027	0	15,237	850	1,296,480	1,430	1,313,997	0	11,767	850	1,245,680	1,430	1,259,727
2028	0	15,244	1,453	1,296,820	1,430	1,314,947	0	11,774	1,453	1,246,020	1,430	1,260,677
2029	0	15,238	(1,870)	1,297,160	1,430	1,311,958	0	11,768	(1,870)	1,246,360	1,430	1,257,688
2030	0	15,244	807	1,297,500	1,430	1,314,981	0	11,774	807	1,246,700	1,430	1,260,711
2031	0	15,243	1,369	1,297,860	1,430	1,315,902	0	11,773	1,369	1,247,060	1,430	1,261,632
2032	0	15,251	(2,458)	1,298,220	1,430	1,312,443	0	11,781	(2,458)	1,247,420	1,430	1,258,173
2033	0	15,226	(1,468)	1,298,580	1,430	1,313,768	0	11,756	(1,468)	1,247,780	1,430	1,259,498
2034	0	15,230	2,645	1,298,940	1,430	1,318,245	0	11,760	2,645	1,248,140	1,430	1,263,975
2035	0	15,045	19,716	1,299,300	1,430	1,335,491	0	11,575	19,716	1,248,500	1,430	1,281,221

TABLE B-6  
Annual Water Quantities Conveyed Through Each Pumping and Power  
Recovery Plant of Project Transportation Facilities (Continued)

(in acre-feet)

Sheet 7 of 9

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	Santa Ana Division						West Branch, California Aqueduct					
	Devil Canyon Powerplant						Oso Pumping Plant					
	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total
				Water Supply	Recrea- tion					Water Supply	Recrea- tion	
	[75]	[76]	[77]	[78]	[79]	[80]	[81]	[82]	[83]	[84]	[85]	[86]
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	2,444	133	0	0	0	2,577
1972	37	0	0	1,275	0	1,312	63,883	6,557	(6,405)	71,991	6,481	142,507
1973	40,848	14,745	0	51,812	0	107,405	124,461	16,995	4,029	155,317	1,075	301,877
1974	74,666	8,367	(4,925)	102,198	0	180,308	160,860	12,702	(4,146)	209,172	2,064	380,652
1975	10,000	1,995	(6,719)	189,526	0	194,802	93,352	23,008	7,704	374,306	3,288	501,658
1976	4,168	5,180	(9,182)	235,711	23	235,900	56,954	15,845	(136,116)	420,708	1,429	358,820
1977	0	8,082	(5,235)	101,137	469	104,453	0	4,407	(98,665)	122,447	(20)	28,149
1978	14,820	3,754	21,686	373,636	481	414,377	45,105	9,061	52,774	171,139	176	278,255
1979	12,302	5,620	(27,107)	356,854	485	348,154	0	25,355	(18,781)	145,598	0	152,172
1980	0	9,468	12,714	395,975	742	418,899	0	24,576	(140,168)	165,931	481	50,820
1981	0	8,401	(23,448)	569,088	807	554,848	0	15,254	59,637	283,264	3,179	361,334
1982	0	6,012	44,469	399,799	1,798	452,078	0	23,824	61,685	360,878	2,126	448,513
1983	0	8,597	5,188	230,277	1,078	245,140	0	23,601	(74,308)	166,995	6,111	122,399
1984	0	12,861	(850)	250,938	1,414	264,363	0	12,461	(138,146)	272,101	3,750	150,166
1985	0	14,325	(8,791)	349,336	956	355,826	0	28,257	142,219	403,097	3,728	577,301
1986	0	9,646	8,339	392,650	1,378	412,013	0	23,816	25,288	393,203	1,777	444,084
1987	0	7,919	(11,331)	365,451	1,118	363,157	0	18,952	(9,490)	433,452	5,698	448,612
1988	0	2,341	2,238	499,285	861	504,725	0	20,464	(30,848)	507,166	3,389	500,171
1989	0	18,439	(5,517)	658,730	1,301	672,953	0	27,423	(40,227)	611,681	6,560	605,437
1990	0	(13,422)	(4,622)	728,723	1,281	711,960	0	(32,356)	(8,747)	791,345	7,491	757,733
1991	0	9,357	13,502	475,100	1,250	499,209	0	14,825	36,003	436,641	5,380	492,849
1992	0	9,551	(45,447)	950,200	1,250	915,554	0	16,954	58,254	889,000	5,380	969,588
1993	0	9,724	9,852	960,200	1,250	981,026	0	14,912	(75,067)	985,050	5,380	930,275
1994	0	8,083	(2,942)	1,008,500	1,250	1,014,891	0	13,972	14,137	988,950	5,380	1,022,439
1995	0	8,076	(244)	1,008,500	1,250	1,017,582	0	14,244	33,217	992,765	5,380	1,045,606
1996	0	8,043	(3,874)	1,159,340	1,250	1,164,759	0	14,446	(14,243)	1,036,100	5,380	1,041,683
1997	0	8,033	22	1,159,680	1,250	1,168,985	0	14,508	55,216	1,036,500	5,380	1,111,604
1998	0	6,034	477	1,160,020	1,250	1,169,781	0	14,923	(2,481)	1,036,900	5,380	1,054,722
1999	0	8,037	(272)	1,160,360	1,250	1,169,375	0	14,944	3,175	1,037,300	5,380	1,060,799
2000	0	8,034	(476)	1,178,000	1,250	1,186,808	0	14,906	(1,058)	1,037,700	5,380	1,056,928
2001	0	8,033	749	1,178,340	1,250	1,188,372	0	14,884	1,705	1,038,038	5,380	1,060,007
2002	0	8,036	0	1,178,680	1,250	1,187,966	0	14,872	(3,821)	1,038,376	5,380	1,054,807
2003	0	8,033	(725)	1,179,020	1,250	1,187,578	0	14,894	570	1,038,714	5,380	1,059,558
2004	0	8,034	727	1,183,360	1,250	1,193,371	0	14,876	1,292	1,039,052	5,380	1,060,600
2005	0	8,034	(698)	1,187,700	1,250	1,196,286	0	14,894	1,635	1,039,400	5,380	1,061,309
2006	0	8,033	447	1,192,040	1,250	1,201,770	0	14,876	4,053	1,039,562	5,380	1,063,871
2007	0	8,034	250	1,196,380	1,250	1,205,914	0	14,897	(5,010)	1,039,724	5,380	1,054,991
2008	0	8,033	0	1,200,720	1,250	1,210,003	0	14,916	1,582	1,039,886	5,380	1,061,764
2009	0	8,037	0	1,205,060	1,250	1,214,347	0	14,915	(969)	1,040,048	5,380	1,059,374
2010	0	8,034	0	1,209,400	1,250	1,218,684	0	14,809	(1,443)	1,040,200	5,380	1,058,946
2011	0	8,034	0	1,213,760	1,250	1,223,044	0	14,859	216	1,040,200	5,380	1,060,655
2012	0	8,033	0	1,218,120	1,250	1,227,403	0	14,856	(735)	1,040,200	5,380	1,059,701
2013	0	8,036	(220)	1,222,480	1,250	1,231,546	0	14,807	(1,045)	1,040,200	5,380	1,059,342
2014	0	8,034	221	1,224,840	1,250	1,234,345	0	14,827	(426)	1,040,200	5,380	1,059,981
2015	0	8,036	0	1,227,200	1,250	1,236,486	0	14,852	646	1,040,200	5,380	1,061,078
2018	0	8,035	0	1,229,540	1,250	1,238,825	0	14,860	(334)	1,040,200	5,380	1,060,106
2017	0	8,034	1	1,231,880	1,250	1,241,165	0	14,860	1,469	1,040,200	5,380	1,061,909
2018	0	8,034	0	1,234,220	1,250	1,243,504	0	14,862	(1,047)	1,040,200	5,380	1,059,395
2019	0	8,036	0	1,235,040	1,250	1,244,326	0	14,831	(878)	1,040,200	5,380	1,059,533
2020	0	8,033	(969)	1,235,860	1,250	1,244,174	0	14,847	(242)	1,040,200	5,380	1,060,185
2021	0	8,033	249	1,236,680	1,250	1,246,212	0	14,850	322	1,040,200	5,380	1,060,752
2022	0	8,034	(254)	1,237,500	1,250	1,246,530	0	14,844	68	1,040,200	5,380	1,060,492
2023	0	8,033	976	1,238,320	1,250	1,248,579	0	14,849	684	1,040,200	5,380	1,061,113
2024	0	8,033	0	1,238,860	1,250	1,246,143	0	14,774	(3,349)	1,040,200	5,380	1,057,005
2025	0	8,035	(220)	1,239,200	1,250	1,248,265	0	14,784	3,576	1,040,200	5,380	1,063,940
2026	0	8,035	(249)	1,239,540	1,250	1,248,576	0	14,813	276	1,040,200	5,380	1,060,669
2027	0	8,034	(5)	1,239,880	1,250	1,249,159	0	14,789	(2,550)	1,040,200	5,380	1,057,819
2028	0	8,034	477	1,240,220	1,250	1,249,981	0	14,792	2,612	1,040,200	5,380	1,062,984
2029	0	8,037	0	1,240,560	1,250	1,249,847	0	14,787	(2,919)	1,040,200	5,380	1,057,448
2030	0	8,035	0	1,240,900	1,250	1,250,185	0	14,790	2,610	1,040,200	5,380	1,062,980
2031	0	8,037	0	1,241,260	1,250	1,250,547	0	14,827	(71)	1,040,200	5,380	1,060,336
2032	0	8,037	(725)	1,241,620	1,250	1,250,182	0	14,796	(1,315)	1,040,200	5,380	1,059,061
2033	0	8,033	726	1,241,980	1,250	1,251,989	0	14,800	882	1,040,200	5,380	1,061,262
2034	0	8,033	0	1,242,340	1,250	1,251,623	0	14,820	(837)	1,040,200	5,380	1,059,563
2035	0	8,033	(437)	1,242,700	1,250	1,251,546	0	14,491	(80,193)	1,040,200	5,380	979,876



TABLE B-6  
Annual Water Quantities Conveyed Through Each Pumping and Power  
Recovery Plant of Project Transportation Facilities (Continued)

Calendar Year	(in acre-feet)											Sheet 8 of 9
	CALIFORNIA AQUEDUCT (continued)											
	West Branch, California Aqueduct (continued)											
	Warne Powerplant						Castaic Powerplant					
	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		Total	Initial Fill Water	Opera- tional Losses	Reservoir Storage Changes	Deliveries		
			Water Supply	Recrea- tion						Water Supply	Recrea- tion	
	[87]	[88]	[89]	[90]	[91]	[92]	[93]	[94]	[95]	[96]	[97]	[98]
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	57,364	1,788	(6,162)	71,938	6,481	131,409
1973	0	0	0	0	0	0	37,198	6,430	4,542	155,297	1,075	204,542
1974	0	0	0	0	0	0	82,364	1,772	(950)	209,136	541	292,863
1975	0	0	0	0	0	0	90,460	5,002	(1,534)	374,280	1,563	469,771
1976	0	0	0	0	0	0	55,990	(7,695)	(132,036)	420,684	1,429	338,372
1977	0	0	0	0	0	0	0	(1,485)	(102,532)	122,447	(20)	18,410
1978	0	0	0	0	0	0	45,105	(2,264)	129,523	171,139	176	343,679
1979	0	0	0	0	0	0	0	(2,339)	(20,400)	145,598	0	122,859
1980	0	0	0	0	0	0	0	991	(118,026)	165,931	481	49,377
1981	0	0	0	0	0	0	0	(44,416)	47,244	283,264	2,704	288,796
1982	0	24,468	61,169	360,878	2,126	448,641	0	(60,135)	59,069	360,878	1,187	360,999
1983	0	20,780	(74,308)	166,995	6,111	119,578	0	(33,418)	(46,904)	166,995	2,618	89,291
1984	0	13,572	(139,219)	275,212	2,208	151,773	0	(29,618)	(139,545)	275,212	2,201	108,250
1985	0	29,286	141,492	403,097	874	574,749	0	(4,622)	135,007	403,097	844	534,326
1986	0	23,008	25,288	393,203	1,777	443,276	0	(5,440)	25,120	393,203	1,777	414,660
1987	0	22,871	(9,464)	433,452	5,698	452,557	0	1,467	(6,069)	433,452	2,734	431,584
1988	0	23,256	(31,453)	507,169	3,389	502,361	0	12,653	(28,498)	507,169	1,359	492,683
1989	0	27,131	(40,718)	611,681	6,560	604,654	0	634	(40,214)	611,681	3,161	575,262
1990	0	(34,208)	(8,747)	791,345	7,491	755,881	0	14,012	(15,110)	786,509	3,419	788,830
1991	0	12,915	36,003	436,641	5,380	490,939	0	7,255	44,492	433,527	2,330	487,604
1992	0	15,044	58,254	889,000	5,380	967,678	0	9,325	48,254	884,000	2,330	943,909
1993	0	13,002	(75,067)	985,050	5,380	928,365	0	7,277	(75,067)	980,050	2,330	914,590
1994	0	12,062	14,137	988,950	5,380	1,020,529	0	5,774	9,235	983,950	2,330	1,001,289
1995	0	12,334	33,217	992,765	5,380	1,043,696	0	6,049	33,217	987,765	2,330	1,029,361
1996	0	12,536	(14,243)	1,036,100	5,380	1,039,773	0	6,251	(14,243)	1,035,200	2,330	1,029,538
1997	0	12,598	55,216	1,036,500	5,380	1,109,694	0	6,313	55,216	1,035,200	2,330	1,099,059
1998	0	13,013	(2,481)	1,036,900	5,380	1,052,812	0	6,728	(2,481)	1,035,200	2,330	1,041,777
1999	0	13,034	3,175	1,037,300	5,380	1,058,889	0	6,749	3,175	1,035,200	2,330	1,047,454
2000	0	12,996	(1,058)	1,037,700	5,380	1,055,018	0	6,711	(1,058)	1,035,200	2,330	1,043,183
2001	0	12,974	1,705	1,038,038	5,380	1,058,097	0	6,689	1,705	1,035,200	2,330	1,045,924
2002	0	12,962	(3,821)	1,038,376	5,380	1,052,897	0	6,677	(3,821)	1,035,200	2,330	1,040,386
2003	0	12,984	570	1,038,714	5,380	1,057,648	0	6,699	570	1,035,200	2,330	1,044,799
2004	0	12,966	1,292	1,039,052	5,380	1,058,690	0	6,681	1,292	1,035,200	2,330	1,045,503
2005	0	12,984	1,635	1,039,400	5,380	1,059,399	0	6,699	1,635	1,035,200	2,330	1,045,864
2006	0	12,966	4,053	1,039,562	5,380	1,061,961	0	6,681	4,053	1,035,200	2,330	1,048,264
2007	0	12,987	(5,010)	1,039,724	5,380	1,053,081	0	6,702	(5,010)	1,035,200	2,330	1,039,222
2008	0	13,006	1,582	1,039,886	5,380	1,059,854	0	6,721	1,582	1,035,200	2,330	1,045,833
2009	0	13,005	(969)	1,040,408	5,380	1,057,464	0	6,720	(969)	1,035,200	2,330	1,043,281
2010	0	12,899	(1,443)	1,040,200	5,380	1,057,036	0	6,614	(1,443)	1,035,200	2,330	1,042,701
2011	0	12,949	216	1,040,200	5,380	1,058,745	0	6,664	216	1,035,200	2,330	1,044,410
2012	0	12,946	(735)	1,040,200	5,380	1,057,791	0	6,661	(735)	1,035,200	2,330	1,043,456
2013	0	12,897	(1,045)	1,040,200	5,380	1,057,432	0	6,612	(1,045)	1,035,200	2,330	1,043,097
2014	0	12,917	(426)	1,040,200	5,380	1,058,071	0	6,632	(426)	1,035,200	2,330	1,043,736
2015	0	12,942	646	1,040,200	5,380	1,059,168	0	6,657	646	1,035,200	2,330	1,044,833
2016	0	12,950	(334)	1,040,200	5,380	1,058,196	0	6,665	(334)	1,035,200	2,330	1,043,861
2017	0	12,950	1,469	1,040,200	5,380	1,059,999	0	6,665	1,469	1,035,200	2,330	1,045,664
2018	0	12,952	(1,047)	1,040,200	5,380	1,057,485	0	6,667	(1,047)	1,035,200	2,330	1,043,150
2019	0	12,921	(878)	1,040,200	5,380	1,057,623	0	6,636	(878)	1,035,200	2,330	1,043,288
2020	0	12,937	(242)	1,040,200	5,380	1,058,275	0	6,652	(242)	1,035,200	2,330	1,043,940
2021	0	12,940	322	1,040,200	5,380	1,058,842	0	6,655	322	1,035,200	2,330	1,044,507
2022	0	12,934	68	1,040,200	5,380	1,058,582	0	6,649	68	1,035,200	2,330	1,044,247
2023	0	12,939	684	1,040,200	5,380	1,059,203	0	6,654	684	1,035,200	2,330	1,044,868
2024	0	12,864	(3,349)	1,040,200	5,380	1,055,095	0	6,579	(3,349)	1,035,200	2,330	1,040,760
2025	0	12,874	3,576	1,040,200	5,380	1,062,030	0	6,589	3,576	1,035,200	2,330	1,047,695
2026	0	12,903	276	1,040,200	5,380	1,058,759	0	6,618	276	1,035,200	2,330	1,044,424
2027	0	12,879	(2,550)	1,040,200	5,380	1,055,909	0	6,594	(2,550)	1,035,200	2,330	1,041,574
2028	0	12,882	2,612	1,040,200	5,380	1,061,074	0	6,597	2,612	1,035,200	2,330	1,046,739
2029	0	12,877	(2,919)	1,040,200	5,380	1,055,538	0	6,592	(2,919)	1,035,200	2,330	1,041,203
2030	0	12,880	2,610	1,040,200	5,380	1,061,070	0	6,595	2,610	1,035,200	2,330	1,046,735
2031	0	12,917	(71)	1,040,200	5,380	1,058,426	0	6,632	(71)	1,035,200	2,330	1,044,091
2032	0	12,886	(1,315)	1,040,200	5,380	1,057,151	0	6,601	(1,315)	1,035,200	2,330	1,042,816
2033	0	12,890	882	1,040,200	5,380	1,059,352	0	6,605	882	1,035,200	2,330	1,045,017
2034	0	12,910	(837)	1,040,200	5,380	1,057,653	0	6,625	(837)	1,035,200	2,330	1,043,318
2035	0	12,581	(80,193)	1,040,200	5,380	977,968	0	6,296	(80,193)	1,035,200	2,330	963,633

TABLE B-6  
Annual Water Quantities Conveyed Through Each Pumping and Power  
Recovery Plant of Project Transportation Facilities (Continued)

(in acre-feet)

Sheet 9 of 9

Calendar Year	CALIFORNIA AQUEDUCT (continued)						
	Coastal Branch, California Aqueduct						
	Las Perillas and Badger Hill Pumping Plants				Devil's Den, Bluestone, and Polonio Pass Pumping Plants and San Luis Obispo Powerplant		
	Initial Fill Water	Opera- tional Losses	Water Supply Delivery	Total	Opera- tional Losses	Water Supply Delivery	Total
	[99]	[100]	[101]	[102]	[103]	[104]	[105]
1961	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0
1968	210	873	0	79,039	0	0	0
1969	0	1,042	0	62,064	0	0	0
1970	0	638	0	83,649	0	0	0
1971	0	3,455	0	110,971	0	0	0
1972	0	1,745	0	121,755	0	0	0
1973	0	5,479	0	78,645	0	0	0
1974	0	7,344	0	78,174	0	0	0
1975	0	5,819	0	85,216	0	0	0
1976	0	6,562	0	90,058	0	0	0
1977	0	5,777	0	40,579	0	0	0
1978	0	9,085	0	92,604	0	0	0
1979	0	10,896	0	123,155	0	0	0
1980	0	9,449	0	111,379	0	0	0
1981	0	13,232	0	109,754	0	0	0
1982	0	7,984	0	95,776	0	0	0
1983	0	5,710	0	100,518	0	0	0
1984	0	5,740	0	126,387	0	0	0
1985	0	7,563	0	120,823	0	0	0
1986	0	8,562	0	131,599	0	0	0
1987	0	11,363	0	128,080	0	0	0
1988	0	0	0	120,969	0	0	0
1989	0	11,454	0	116,801	0	0	0
1990	0	(13,004)	0	109,702	0	0	0
1991	0	590	0	0	0	0	0
1992	0	590	0	120,100	0	0	0
1993	0	628	0	120,100	38	0	38
1994	0	802	0	120,100	212	0	212
1995	0	802	0	120,100	212	0	212
1996	0	802	0	201,186	212	70,486	70,698
1997	0	802	0	201,186	212	70,486	70,698
1998	0	802	0	201,186	212	70,486	70,698
1999	0	802	0	201,186	212	70,486	70,698
2000	0	802	0	201,186	212	70,486	70,698
2001	0	802	0	201,186	212	70,486	70,698
2002	0	802	0	201,186	212	70,486	70,698
2003	0	802	0	201,186	212	70,486	70,698
2004	0	802	0	201,186	212	70,486	70,698
2005	0	802	0	201,186	212	70,486	70,698
2006	0	802	0	201,186	212	70,486	70,698
2007	0	802	0	201,186	212	70,486	70,698
2008	0	802	0	201,186	212	70,486	70,698
2009	0	802	0	201,186	212	70,486	70,698
2010	0	802	0	201,186	212	70,486	70,698
2011	0	802	0	201,186	212	70,486	70,698
2012	0	802	0	201,186	212	70,486	70,698
2013	0	802	0	201,186	212	70,486	70,698
2014	0	802	0	201,186	212	70,486	70,698
2015	0	802	0	201,186	212	70,486	70,698
2016	0	802	0	201,186	212	70,486	70,698
2017	0	802	0	201,186	212	70,486	70,698
2018	0	802	0	201,186	212	70,486	70,698
2019	0	802	0	201,186	212	70,486	70,698
2020	0	802	0	201,186	212	70,486	70,698
2021	0	802	0	201,186	212	70,486	70,698
2022	0	802	0	201,186	212	70,486	70,698
2023	0	802	0	201,186	212	70,486	70,698
2024	0	802	0	201,186	212	70,486	70,698
2025	0	802	0	201,186	212	70,486	70,698
2026	0	802	0	201,186	212	70,486	70,698
2027	0	802	0	201,186	212	70,486	70,698
2028	0	802	0	201,186	212	70,486	70,698
2029	0	802	0	201,186	212	70,486	70,698
2030	0	802	0	201,186	212	70,486	70,698
2031	0	802	0	201,186	212	70,486	70,698
2032	0	802	0	201,186	212	70,486	70,698
2033	0	802	0	201,186	212	70,486	70,698
2034	0	802	0	201,186	212	70,486	70,698
2035	0	802	0	201,186	212	70,486	70,698



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*Tables B-7 through B-34 follow.*

TABLE B-7  
Reconciliation of Capital Costs Allocated to Water Supply and Power  
Generation for Years 1952 Through 2035

(in thousands of dollars)

Item	Project Costs Allocated to Water Supply and Power Generation							Capital Costs Allocated to Other Purposes	Total State Water Project Capital Cost
	Misc. Income Credited to Construction (a)	Allowance for Future Price Escalation (b)	Costs of Construction of Delivery Structures (c)	Costs of Requested Excess Capacity and Future Enlargement (d)	Capital Cost Component of Delta Water Charge (e) (f) (g)	Capital Cost Component of Transportation Water Charge (h)	Water Supply and Power Total		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
<b>CONSERVATION FACILITIES</b>									
Upper Feather Division									
Frenchman Dam and Lake	174	0	0	0	600	0	774	2,877	3,651
Grizzly Valley Dam and Lake	28	0	0	0	37	0	65	7,135	7,200
Antelope Dam and Lake	0	0	0	0	0	0	0	5,431	5,431
Abbey Bridge Dam and Reservoir	0	0	0	0	0	0	0	518	518
Dixie Refuge Dam and Reservoir	0	0	0	0	0	0	0	236	236
Total, Upper Feather Division	202	0	0	0	637	0	839	16,197	17,036
Oroville Division									
Multipurpose Facilities	2,211	167	154	0	369,699	0	372,231	88,289	460,520
Specific Power Facilities	367	58	0	0	107,445	0	107,870	1,220	109,090
Total, Oroville Division	2,578	225	154	0	477,144	0	480,101	89,509	569,610
California Aqueduct									
North San Joaquin Division	171	461	0	0	80,289	0	80,921	2,952	83,873
San Luis Division	873	122	0	0	109,510	0	110,505	4,605	115,110
Total, California Aqueduct	1,044	583	0	0	189,799	0	191,426	7,557	198,983
Delta Facilities	8,077	24,858	0	0	319,996	0	352,931	36,405	389,336
Planning and Pre-operation	6,087	41,636	0	0	180,839	0	228,562	0	228,562
<b>TOTAL, CONSERVATION FACILITIES</b>	<b>17,988</b>	<b>67,302</b>	<b>154</b>	<b>0</b>	<b>1,168,415</b>	<b>0</b>	<b>1,253,859</b>	<b>149,668</b>	<b>1,403,527</b>
<b>TRANSPORTATION FACILITIES</b>									
Upper Feather Division									
Grizzly Valley Pipeline	0	0	0	0	0	341	341	0	341
North Bay Aqueduct	60	75	671	0	0	93,954	94,760	0	94,760
South Bay Aqueduct	1,323	342	1,402	0	0	55,241	58,308	21,984	80,292
California Aqueduct									
North San Joaquin Division	381	1,027	25	0	0	179,281	180,714	6,569	187,283
San Luis Division	143	113	0	0	0	107,656	107,912	6,790	114,702
South San Joaquin Division	258	207	3,258	2,065	0	290,804	296,592	17,737	314,329
Tehachapi Division	35	91	4	5,229	0	295,434	300,793	17,818	318,611
Mojave Division	438	1,098	548	0	0	345,009	347,093	29,453	376,546
Santa Ana Division	304	878	3,301	9,710	0	172,245	186,438	22,845	209,283
West Branch	34,527	1,324	2,936	37	0	460,762	499,586	33,240	532,826
Coastal Branch	108	11,536	100	0	0	320,191	331,935	0	331,935
Total, California Aqueduct	36,194	16,274	10,172	17,041	0	2,171,382	2,251,063	134,452	2,385,515
<b>TOTAL, TRANSPORTATION FACILITIES</b>	<b>37,577</b>	<b>16,691</b>	<b>12,245</b>	<b>17,041</b>	<b>0</b>	<b>2,320,918</b>	<b>2,404,472</b>	<b>156,436</b>	<b>2,560,908</b>
<b>EAST BRANCH ENLARGEMENT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>423,633</b>	<b>423,633</b>	<b>0</b>	<b>423,633</b>
<b>SAN JOAQUIN DRAINAGE FACILITIES</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>71,365</b>	<b>71,365</b>
<b>OFF-AQUEDUCT POWER GENERATION FACILITIES</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>444,296</b>	<b>444,296</b>	<b>0</b>	<b>444,296</b>
<b>LAND PURCHASE - KERN WATER BANK</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>34,686</b>	<b>0</b>	<b>34,686</b>	<b>0</b>	<b>34,686</b>
<b>UNASSIGNED AND DAVIS- GRUNSKY</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20,026</b>	<b>130,000</b>	<b>150,026</b>
<b>Subtotal</b>	<b>55,565</b>	<b>83,993</b>	<b>12,399</b>	<b>17,041</b>	<b>1,203,101</b>	<b>3,188,847</b>	<b>4,580,972</b>	<b>507,469</b>	<b>5,088,441</b>
<b>Less: 2006-2035 Costs</b>	<b>0</b>	<b>8,827</b>	<b>0</b>	<b>0</b>	<b>14,035</b>	<b>0</b>	<b>22,862</b>	<b>0</b>	<b>22,862</b>
<b>TOTAL</b>	<b>55,565</b>	<b>75,166</b>	<b>12,399</b>	<b>17,041</b>	<b>1,189,066</b>	<b>3,188,847</b>	<b>4,558,110</b>	<b>507,469</b>	<b>5,065,579</b>

a) Miscellaneous project receipts that are applied for accounting purposes to reduce the capital costs of the particular facilities.

b) These allowances are included for planning the future financial program, but not for determining current water charges.

The costs shown in this appendix are based on prices prevailing on December 31, 1990.

c) See Table B-8.

d) See Table B-9.

e) See Table B-13. A portion of these costs will be offset by power generation sales and credits.

f) The planning and preoperation costs of conservation facilities include \$46,866,000 of planning costs financed from Systems Revenue and not included in Table 20.

g) The Delta Facilities costs include \$70,000,000 for land purchase at Sherman Island and Clifton Court enlargement, \$6,300,000 for Twitchell Island land purchase, \$12,500,000 in additional costs for Kern Water Bank, and \$20,000,000 for Los Banos Grandes land purchases.

h) See Table B-10, and South San Joaquin expenditures include \$17,900,000 for Arroyo Pasajero land purchase.

TABLE B-8  
Capital Costs of Requested Delivery Structures to Be Built by State

(in dollars)

Project Service Area and Water Supply Contractor	Calendar Year Capital Costs (a)						
	1952-1988	1989	1990	1991	1992	1993	Total
FEATHER RIVER AREA	[1]	[2]	[3]	[4]	[5]	[6]	[7]
County of Butte	104,924	0	0	5,000	0	0	109,924
Thermalito Irrigation District (b)	43,939	0	0	0	0	0	43,939
Subtotal	148,863	0	0	5,000	0	0	153,863
NORTH BAY AREA							
Napa County Flood Control and Water Conservation District	13,590	0	0	0	0	0	13,590
Solano County Water Agency	598,436	35,368	16,063	8,000	0	0	657,867
Subtotal	612,026	35,368	16,063	8,000	0	0	671,457
SOUTH BAY AREA							
Alameda County Flood Control and Water Conservation District, Zone 7	224,357	0	0	2,500	0	0	226,857
Alameda County Water District	143,789	2,007	19,421	24,000	0	0	189,217
Santa Clara Valley Water District	0	0	0	5,000	0	0	5,000
San Francisco Water Department (b)	0	165,377	579,803	235,500	0	0	980,680
Subtotal	368,146	167,384	599,224	267,000	0	0	1,401,754
SAN JOAQUIN VALLEY AREA							
Dudley Ridge Water District	287,669	0	1,726	17	0	0	289,412
Empire West Side Irrigation District	6,358	0	0	0	0	0	6,358
Green Valley Water District (c)	5,292	0	0	0	0	0	5,292
Kern County Water Agency	2,709,182	0	0	0	0	0	2,709,182
Oak Flat Water District	13,753	0	0	0	0	0	13,753
Tracy Golf and Country Club (c)	1,028	0	0	0	0	0	1,028
Tulare Lake Basin Water Storage District	277,483	0	0	0	0	0	277,483
Veterans Administration Cemetery (b)	0	0	3,194	148	0	0	3,342
Subtotal	3,300,765	0	4,920	165	0	0	3,305,850
SOUTHERN CALIFORNIA AREA							
Antelope Valley-East Kern Water Agency	343,860	15,168	11,974	1,000	2,000	0	374,002
Castaic Lake Water Agency (d)	424,535	0	0	4,000	0	0	428,535
Coachella Valley Water District	14,206	0	0	0	0	0	14,206
Crestline-Lake Arrowhead Water Agency	12,097	0	0	0	0	0	12,097
Desert Water Agency	23,438	0	0	0	0	0	23,438
Little Rock Creek Irrigation District	23,732	0	0	0	0	0	23,732
Mojave Water Agency	65,377	4,966	148	0	0	0	70,491
Palmdale Water District	34,173	0	0	0	0	0	34,173
San Bernardino Valley Municipal Water District	704,759	82,720	(96)	0	0	0	787,383
San Gabriel Valley Municipal Water District	131,052	0	0	0	0	0	131,052
San Geronimo Pass Water Agency	66,530	0	0	0	0	0	66,530
The Metropolitan Water District of Southern California	4,261,525	558,748	649	0	0	0	4,820,922
Ventura County Flood Control District	79,699	0	0	0	0	0	79,699
Subtotal	6,184,983	661,602	12,675	5,000	2,000	0	6,866,260
TOTAL	10,614,783	864,354	632,882	285,165	2,000	0	12,399,184

a) Approximate only, not to be construed as invoice amounts.

b) Not a SWP water supply contractor.

c) Not a SWP water supply contractor, but has contracted for water.

d) Devil's Den Water District merged with Castaic Lake Water Agency effective January 1, 1992.

TABLE B-9  
Capital Costs of Requested Excess Peaking Capacity

(in dollars unless otherwise indicated)

Sheet 1 of 2

Calendar Year	Total Advance Payments and Credits for Excess Capacity	Total Incremental Costs for Excess Capacity	Over payment (+) or Under payment (-) (a)	Annual Surplus Money Investment Fund Interest Rate (b)		Net Over or Underpayment With Interest (c)
				Jan-Jun	Jul-Dec	
	[1]	[2]	[3]	[4]	[5]	[6]
<b>THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA</b>						
1965	0	158,000	(158,000)	3.968%	4.184%	(163,412)
1966	8,056,000	435,800	7,620,200	4.540%	5.057%	7,701,103
1967	9,094,963	1,878,270	7,216,693	4.815%	4.744%	15,524,533
1968	1,523,252	2,887,351	(1,364,099)	5.330%	5.540%	14,959,187
1969	8,310,651	3,059,310	5,251,341	5.946%	6.389%	21,369,973
1970	3,426,736	2,397,102	1,029,634	7.071%	7.125%	23,986,083
1971	1,086,045	1,146,648	(60,603)	5.154%	5.580%	25,238,017
1972	(4,244,807)	487,394	(4,732,201)	4.477%	4.977%	21,532,965
1973	(15,913,829)	25,041	(15,938,870)	6.023%	8.717%	6,014,116
1974	0	37,775	(37,775)	9.222%	10.351%	6,576,393
1975	0	2,085	(2,085)	7.089%	6.791%	7,038,515
1976	0	0	0	6.048%	6.021%	7,469,662
1977	0	0	0	5.788%	6.182%	7,923,403
1978	0	0	0	7.171%	8.096%	8,539,736
1979	0	0	0	8.979%	9.671%	9,354,605
1980	0	0	0	11.500%	11.500%	10,461,314
Total	11,339,011	12,514,776	(1,175,775)	-	-	10,461,314
<b>SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT</b>						
1967	0	25,730	(25,730)	4.815%	4.744%	(26,611)
1968	184,422	44,053	140,369	5.330%	5.540%	117,587
1969	49,052	38,075	10,977	5.946%	6.389%	136,751
1970	44,911	17,959	26,952	7.071%	7.125%	175,186
1971	61,588	5,900	55,688	5.154%	5.580%	242,927
1972	(20,263)	6,835	(27,098)	4.477%	4.977%	226,230
1973	(180,465)	0	(180,465)	6.023%	8.717%	49,198
1974	0	0	0	9.222%	10.351%	54,130
1975	0	0	0	7.089%	6.791%	57,952
1976	0	0	0	6.048%	6.021%	61,501
1977	0	0	0	5.788%	6.182%	65,237
1978	0	0	0	7.171%	8.096%	70,312
1979	0	0	0	8.979%	9.671%	77,021
1980	0	0	0	11.500%	11.500%	86,133
Total	139,245	138,552	693	-	-	86,133
<b>ANTELOPE VALLEY-EAST KERN WATER AGENCY</b>						
1968	85,495	1,645	83,850	5.330%	5.540%	86,962
1969	52,625	6,326	46,299	5.946%	6.389%	140,964
1970	101,648	15,076	86,572	7.071%	7.125%	243,222
1971	34,062	11,748	22,314	5.154%	5.580%	279,673
1972	(12,794)	2,018	(14,812)	4.477%	4.977%	277,552
1973	(205,354)	308	(205,662)	6.023%	8.717%	77,288
1974	0	96	(96)	9.222%	10.351%	84,933
1975	0	0	0	7.089%	6.791%	90,929
1976	0	190	(190)	6.048%	6.021%	96,300
1977	0	0	0	5.788%	6.182%	102,150
1978	0	0	0	7.171%	8.096%	110,096
1979	0	0	0	8.979%	9.671%	120,601
1980	0	0	0	11.500%	11.500%	134,869
Total	55,682	37,407	18,275	-	-	134,869

a) Overpayment or underpayment for each calendar year - column (1) minus column (2).

b) Interest rates shown are annual rates. Interest is credited daily at applicable rates on funds deposited in the State's Surplus Money Investment Fund.

c) Amounts shown are end-of-year balances. Interest on overpayments is credited at applicable Surplus Money Investment Fund Interest Rates shown in columns (4) and (5). Interest on underpayments is charged at the 1980 Project Interest Rate of 4.584 percent.

TABLE B-9  
Capital Costs of Requested Excess Peaking Capacity (Continued)

(in dollars)

Sheet 2 of 2

ANNUAL REQUIRED ADVANCE OF FUNDS														
Reach Number	Incremental Costs and Advance Payments by Calendar Year													Reach Total
	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1981	
	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA														
Incremental Costs														
8C		1,000	1,000											2,000
8D		43,500	43,500											87,000
9		27,000	27,000	13,500										67,500
10A		29,700	29,700	14,800										74,200
11B	10,100	18,300	18,300	9,200										55,900
12D	1,800		19,300	25,800	12,900									59,800
12E	1,800		12,400	18,800	10,800									43,800
13B			12,600	37,800	31,600									82,000
14A	2,500	500	11,100	80,216	107,504	124,069	37,519	6,413	381	87				370,289
14B	1,200	1,800		19,100	19,100	12,800								54,000
14C	1,800	900		13,500	13,500	9,000								38,700
15A	700		14,000	66,947	133,357	128,099	54,821	5,327	946	2,076				406,273
16A	700		18,900	137,894	182,000	211,608	133,927	26,203	5,767	6,156				723,155
17E		51,500	444,600	537,247	860,024	998,985	699,281	193,286	17,947	29,456	2,085			3,834,411
17F	109,100	261,600	261,600	261,600	261,600	239,500								1,395,000
25			964,270	1,650,947	1,426,925	673,041	221,100	256,165						5,192,448
28J		304,612	13,706	296,668	65,968	230,169	1,209,586	2,017,134	235,900	4,900				4,378,641
Total	129,700	740,412	1,891,976	3,184,019	3,125,276	2,627,271	2,356,234	2,504,528	260,941	42,675	2,085			16,865,117
Current Adjustment														
8C through 25	1. Advance Payments Applied to Incremental Costs Amendment 2 (d)													
	0	8,056,000	9,094,963	1,523,252	8,310,851	3,426,736	1,086,045	(4,244,807)	(14,381,396)				(356,668)	12,514,776
28J	2. Interest Credits-Amendment 2 (e)													
								(1,532,433)					(10,104,646)	(11,637,079)
	3. Advance Payments Applied to Incremental Costs Amendment 5 (f)													
	0	1,240,000	1,483,180	2,469,325	(927,035)	1,729,160	3,215,258	2,967,475	1,690,000	(9,488,722)				4,378,641
	4. Interest Credits-Amendment 5 (g)													
										(2,721,803)				(2,721,803)
	5. Net Required Advance of Funds													
	0	9,296,000	10,578,143	3,992,577	7,383,616	5,155,896	4,301,303	(1,277,332)	(14,233,829)	(12,210,525)			(10,461,314)	2,524,535
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT														
Incremental Costs														
25			25,730	44,053	38,075	17,959	5,900	6,835						138,552
	Total Unadjusted Incremental Costs for Past Payments													
			25,730	44,053	38,075	17,959	5,900	6,835						138,552
Current Adjustments														
	1. Advance Payments Applied to Incremental Costs (d)													
	0		184,422	49,052	44,911	61,588	(20,263)	(174,133)					(7,025)	138,552
	2. Interest Credit													
								(6,332)					(79,108)	(85,440)
	3. Net Required Advance of Funds													
	0		184,422	49,052	44,911	61,588	(20,263)	(180,465)					(h) (86,133)	53,112
ANTELOPE VALLEY-EAST KERN WATER AGENCY														
Incremental Costs														
29A				1,645	6,326	13,376	10,048	2,018	308	96		190		34,007
29F						1,700	1,700							3,400
	Total Unadjusted Incremental Costs for Past Payments													
				1,645	6,326	15,076	11,748	2,016	308	96		190		37,407
Current Adjustment														
	1. Advance Payments Applied to Incremental Costs (d)													
				85,495	52,625	101,648	34,062	(12,794)	(189,120)	0		0	(34,509)	37,407
	2. Interest Credit													
									(16,234)				(100,360)	(116,594)
	3. Net Required Advance of Funds													
				85,495	52,625	101,648	34,062	(12,794)	(205,354)	0		0	(h) (134,869)	(79,187)

d) Actual payments are shown for 1965 through 1976 with 1981 adjusted to reflect overpayments and underpayments without interest for prior years.

e) Interest for overpayments and underpayments under provisions of Amendment 2 of the contract.

f) Actual payments are shown for 1965 through 1973 with 1974 adjusted to reflect overpayments and underpayments without interest for prior years.

g) Interest for overpayments and underpayments under provisions of Amendment 5 of the contract.

h) Amounts in excess of incremental costs, under the provisions of the contract, reduce the Transportation Charge capital cost component of the Agency's Statement of Charges for January 1981.

TABLE B-10  
Capital Costs of Each Aqueduct Reach to Be Reimbursed Through  
Capital Cost Component of Transportation Charge

(in dollars)

Sheet 1 of 8

Calendar Year	UPPER FEATHER DIVISION	NORTH BAY AQUEDUCT					SOUTH BAY AQUEDUCT			
		Reach 1	Reach 2	Reach 3A	Reach 3B	Total	Reach 1	Reach 2	Reach 4	Reach 5
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1952	0	0	0	0	0	0	97	34	30	57
1953	0	0	0	0	0	0	477	166	144	297
1954	0	0	0	0	0	0	1,466	508	437	959
1955	0	0	0	0	0	0	1,944	674	560	1,266
1956	0	0	0	0	0	0	18,789	6,515	5,090	12,545
1957	0	13,290	3,391	0	9,953	26,634	45,090	15,639	12,285	33,218
1958	0	19,202	5,011	0	25,798	50,011	195,985	80,961	7,714	21,930
1959	0	7,517	2,118	0	17,653	27,288	496,140	148,516	24,945	17,118
1960	0	8,797	4,292	0	4,838	17,927	1,130,378	67,351	71,779	68,028
1961	0	1,551	10,318	0	2,526	14,395	3,273,247	180,596	307,885	74,398
1962	0	217	(1,751)	0	414	(1,120)	1,548,884	203,535	695,446	35,102
1963	0	2,510	(1,063)	0	983	2,430	480,716	69,182	2,284,291	206,587
1964	7,945	39,879	12,046	0	21,934	73,859	2,549,118	15,903	181,900	264,410
1965	3,139	72,793	17,900	0	170,361	261,054	807,505	153,454	85,425	447,830
1966	(48)	59,615	12,972	0	438,949	511,536	898,074	149,529	142,096	1,690,200
1967	47	47,257	11,597	0	1,551,023	1,609,877	607,614	50,423	293,304	3,496,284
1968	51,573	70,586	19,560	0	831,158	921,304	965,119	19,543	89,300	2,931,101
1969	234,232	63,650	23,628	0	48,428	133,706	455,173	9,618	3,860	896,727
1970	16,227	59,090	42,733	0	9,415	111,238	52,481	3,380	10,517	154,358
1971	27,204	20,819	31,516	0	8,480	60,815	24,505	4,645	5,035	20,395
1972	9	15,538	12,952	0	10,058	38,548	26,918	825	2,945	26,090
1973	25	18,488	29,018	0	39,878	87,384	24,468	4,010	6,016	12,708
1974	45	67,352	29,978	0	134,332	231,662	17,108	1,192	1,765	65,587
1975	21	62,855	73,112	0	45,091	181,058	57,619	561	1,165	7,291
1976	51	52,419	75,611	218	13,168	141,416	104,242	2,846	8,915	12,701
1977	28	53,274	65,662	2,240	23,138	144,314	176,062	3,625	3,225	16,158
1978	38	61,936	57,158	2,955	28,987	151,036	284,581	4,494	3,668	14,028
1979	23	316,620	91,367	3,953	62,240	474,180	111,106	17,151	8,515	31,725
1980	26	422,804	111,600	19,910	96,125	650,439	368,942	17,708	8,249	38,045
1981	34	430,990	147,295	(10,753)	43,149	610,681	(145,507)	3,589	6,520	12,431
1982	11	934,809	357,720	(7,166)	132,141	1,417,504	(58,468)	17,110	4,427	36,037
1983	19	1,091,090	1,076,627	2,627	517,214	2,687,558	419,518	73,118	34,721	71,032
1984	26	1,875,950	2,317,681	3,282	1,068,350	5,265,243	506,811	36,354	9,609	92,842
1985	29	2,248,491	7,849,886	27,815	3,415,897	13,542,089	29,711	2,168	4,018	26,752
1986	31	16,420,259	10,020,277	1,309,608	1,819,382	29,569,526	86,057	14,745	17,176	14,007
1987	32	11,877,268	7,214,307	1,628,455	1,671,210	22,391,240	129,573	16,258	29,263	33,861
1988	41	3,349,224	1,679,164	1,005,670	686,198	6,720,256	284,480	34,652	50,673	27,246
1989	52	1,057,623	951,707	241,798	377,044	2,628,172	150,164	18,445	39,003	15,869
1990	39	484,187	534,803	181,808	70,882	1,271,680	169,172	26,630	89,246	47,731
1991	0	43,000	27,000	0	61,000	131,000	333,000	60,000	45,000	50,904
1992	0	372,000	6,000	0	290,000	668,000	732,000	69,000	70,000	53,928
1993	0	223,000	2,000	0	19,000	244,000	1,666,000	10,000	10,000	8,316
1994	0	882,000	1,000	0	1,000	884,000	678,000	4,000	2,000	3,528
1995	0	1,000	0	0	1,000	2,000	2,000	4,000	1,000	3,528
1996	0	0	0	0	0	0	1,000	3,000	0	3,528
1997	0	0	0	0	0	0	0	2,000	0	1,764
1998	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
TOTAL	340,899	42,848,950	32,926,173	4,412,420	13,766,397	93,953,940	19,687,359	1,627,653	4,679,162	11,100,447

TABLE B-10  
Capital Costs of Each Aqueduct Reach to Be Reimbursed Through  
Capital Cost Component of Transportation Charge (Continued)

(in dollars)

Sheet 2 of 8

Calendar Year	SOUTH BAY AQUEDUCT (continued)					CALIFORNIA AQUEDUCT NORTH SAN JOAQUIN DIVISION			
	Reach 6	Reach 7	Reach 8	Reach 9	Total	Reach 1	Reach 2A	Reach 2B	Subtotal
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]
1952	8	66	72	132	496	4,012	3,279	1,499	8,790
1953	38	327	336	640	2,425	10,559	8,589	3,964	23,112
1954	123	1,005	1,003	1,954	7,455	13,796	11,163	5,179	30,138
1955	160	1,293	1,149	2,454	9,500	7,370	5,952	2,760	16,082
1956	1,559	11,959	11,043	28,372	95,872	9,880	5,020	2,398	17,298
1957	3,659	28,675	27,385	563,114	729,065	11,953	5,456	2,612	20,021
1958	2,243	17,872	17,385	560,904	904,994	18,585	17,191	7,994	43,770
1959	357	3,200	3,568	149,874	843,718	123,170	100,306	45,510	268,986
1960	1,102	2,944	4,498	359,749	1,705,829	191,408	102,136	48,968	342,512
1961	4,726	18,325	22,765	(1,367)	3,880,575	153,765	195,947	42,843	392,555
1962	17,295	160,939	178,242	209,042	3,048,485	612,258	491,225	168,218	1,271,701
1963	265,414	1,250,386	939,832	129,902	5,626,310	1,993,284	1,525,734	684,095	4,203,113
1964	100,603	1,716,371	2,327,770	2,947,522	10,103,597	4,674,280	2,369,858	700,074	7,744,212
1965	42,345	368,476	637,266	1,921,844	4,464,145	5,877,189	6,873,699	2,975,719	15,726,607
1966	17,663	34,915	140,350	777,887	3,850,714	8,553,362	14,112,820	5,677,099	28,343,281
1967	(41,567)	137,856	147,183	379,764	5,070,861	9,678,607	10,672,113	6,646,739	26,997,459
1968	84,553	2,130	68,057	253,152	4,412,955	6,392,664	891,681	1,303,186	8,587,531
1969	4,279	11,572	162,300	32,000	1,575,529	3,542,767	792,259	443,924	4,778,950
1970	2,487	6,820	20,086	(15,718)	234,411	2,236,607	149,692	115,578	2,501,877
1971	4,350	6,923	17,750	39,084	122,687	98,138	215,512	69,410	383,060
1972	1,084	203	4,800	32,199	95,064	159,608	43,721	7,744	211,073
1973	288	989	7,449	9,693	65,621	105,581	25,496	22,418	153,495
1974	527	6,020	30,628	11,433	134,260	177,700	16,627	45,707	240,034
1975	126	679	1,086	3,464	71,991	239,144	14,680	169,676	423,500
1976	701	3,529	8,362	26,186	167,482	641,860	45,533	65,943	753,336
1977	270	1,310	8,651	24,938	234,239	274,381	20,283	22,568	317,232
1978	231	1,204	1,631	17,123	306,960	801,265	36,221	9,714	847,200
1979	1,367	1,721	2,134	7,322	181,041	1,051,792	59,695	26,106	1,137,593
1980	1,321	1,718	2,182	7,102	445,267	4,173,603	96,760	38,789	4,309,152
1981	308	1,461	1,397	5,070	(114,731)	(503,289)	1,487,444	191,320	1,175,475
1982	670	1,286	1,352	3,701	6,115	665,079	38,356	19,274	722,709
1983	377	5,233	7,446	21,341	632,786	679,003	77,066	250,189	1,006,258
1984	269	1,853	1,667	13,299	662,704	1,557,914	41,349	48,477	1,647,740
1985	376	1,547	2,028	6,158	72,758	666,253	22,058	63,633	751,944
1986	1,121	2,750	3,320	12,270	151,446	401,075	63,935	35,458	500,468
1987	1,554	3,152	3,671	23,081	240,413	810,849	92,875	43,180	946,904
1988	5,649	6,670	7,628	34,727	451,725	3,051,313	(124,042)	(57,349)	2,869,922
1989	3,203	4,395	5,341	17,392	253,812	7,019,330	360,838	176,823	7,556,991
1990	5,643	20,254	37,006	89,968	485,650	12,391,752	120,723	2,406,793	14,919,268
1991	10,000	8,000	11,000	36,000	553,904	17,972,584	274,615	118,644	18,365,843
1992	15,000	12,000	17,000	57,000	1,025,928	8,826,807	399,924	175,300	9,402,031
1993	1,000	2,000	4,000	10,000	1,711,316	7,593,890	49,990	19,996	7,663,876
1994	0	1,000	1,000	2,000	691,528	1,595,696	5,999	2,000	1,603,695
1995	0	0	1,000	1,000	12,528	25,328	3,333	1,333	29,994
1996	0	0	0	0	7,528	23,329	667	0	23,996
1997	0	0	0	0	3,764	667	0	0	667
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	562,482	3,871,028	4,699,819	6,812,772	55,240,722	114,606,168	41,823,778	22,851,505	179,281,451

TABLE B-10  
Capital Costs of Each Aqueduct Reach to Be Reimbursed Through  
Capital Cost Component of Transportation Charge (Continued)

(in dollars)

Sheet 3 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)									
	SAN LUIS DIVISION						SOUTH SAN JOAQUIN DIVISION			
	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Subtotal	Reach 8C	Reach 8D	Reach 9	
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	
1952	2,492	3,549	3,987	1,010	1,390	12,428	13	727		1,109
1953	6,999	10,144	10,986	2,834	3,869	34,832	45	2,671		4,185
1954	8,704	12,545	13,693	3,520	4,766	43,228	50	2,719		4,026
1955	4,273	6,055	6,813	1,728	2,325	21,194	19	888		1,100
1956	3,295	5,600	5,857	1,445	3,556	19,753	98	3,850		4,376
1957	3,543	6,115	6,357	1,565	3,998	21,578	234	10,604		13,209
1958	11,927	19,393	22,037	5,509	7,512	66,378	375	19,033		25,073
1959	21,979	37,358	39,689	9,613	19,679	128,518	436	20,578		25,697
1960	207,025	45,419	41,044	12,074	37,633	343,195	1,673	44,565		25,290
1961	184,443	292,639	170,559	38,338	70,068	756,047	3,949	75,726		30,852
1962	495,836	549,984	252,698	22,397	26,967	1,347,882	6,131	159,481		62,375
1963	2,772,189	2,034,351	2,498,712	66,353	30,647	7,402,252	5,861	161,252		81,343
1964	4,348,311	4,932,301	1,053,227	161,422	251,461	10,746,722	4,014	90,622		117,907
1965	3,860,997	5,688,252	2,869,931	1,072,111	667,768	14,159,059	15,049	491,042		564,036
1966	2,312,372	8,527,843	5,765,798	4,230,221	7,708,334	28,544,568	201,274	5,197,322		2,539,278
1967	(44,527)	2,062,305	6,942,522	222,885	6,675,398	15,858,583	212,285	4,982,844		3,363,650
1968	119,884	395,689	973,956	179,917	461,031	2,130,477	64,234	611,192		940,074
1969	(6,065)	126,946	98,492	107,486	160,668	487,527	58,960	116,146		85,130
1970	32,387	(20,243)	105,385	(827,457)	1,215,966	506,038	23,011	106,810		84,116
1971	99,945	230,624	305,227	26,995	341,010	1,003,801	8,813	33,099		23,088
1972	15,990	90,852	17,053	14,621	281,343	419,859	10,818	13,349		16,603
1973	6,753	103,707	41,549	13,610	41,427	207,246	5,145	11,089		13,249
1974	6,618	117,165	55,978	16,199	71,796	267,756	5,434	24,433		16,567
1975	18,921	107,275	23,671	8,797	152,574	311,238	5,424	15,960		12,966
1976	17,485	79,554	13,041	5,138	41,687	156,905	19,931	76,280		62,164
1977	35,707	84,689	9,412	4,028	9,655	143,471	21,096	70,005		97,952
1978	8,539	428,395	7,006	3,536	6,994	454,470	7,584	40,453		17,395
1979	(35,394)	543,225	19,463	9,485	(242,253)	294,526	10,474	6,181		6,227
1980	66,622	3,450,695	191,307	75,209	185,384	3,969,217	2,158	17,492		17,706
1981	29,063	(2,245,599)	(40,600)	(14,268)	855,592	(1,415,812)	1,145	9,667		9,527
1982	95,242	(1,640,670)	14,989	7,561	3,491,470	1,968,592	1,678	4,945		4,208
1983	89,560	110,587	24,680	11,308	1,813,429	2,049,564	7,532	10,483		9,149
1984	37,494	121,228	33,130	16,419	3,063,804	3,272,075	26,489	10,111		6,267
1985	66,589	101,182	24,800	11,499	594,560	798,630	6,891	8,583		6,720
1986	76,978	207,936	53,084	20,202	1,392,372	1,750,572	8,909	25,062		20,549
1987	24,065	188,833	46,298	18,918	1,174,922	1,453,036	13,116	20,247		57,413
1988	(137,253)	330,962	(388,465)	(133,637)	1,380,409	1,052,016	9,659	(120,371)		(60,910)
1989	49,613	682,752	241,942	85,531	772,723	1,832,561	6,950	97,841		283,106
1990	43,033	402,413	93,758	39,162	726,351	1,304,717	7,100	43,755		2,014,972
1991	154,435	850,586	167,854	61,295	108,445	1,342,615	41,492	135,792		86,756
1992	241,171	1,332,459	264,983	95,243	170,683	2,104,539	64,124	211,232		136,735
1993	29,617	146,165	36,777	13,202	21,689	247,450	6,601	24,518		17,917
1994	2,821	7,544	5,658	1,886	2,829	20,738	0	1,886		1,886
1995	2,116	5,658	2,829	943	1,886	13,432	0	1,886		943
1996	705	1,886	0	0	0	2,591	0	0		0
1997	0	0	0	0	0	0	0	0		0
1998	0	0	0	0	0	0	0	0		0
1999	0	0	0	0	0	0	0	0		0
2000	0	0	0	0	0	0	0	0		0
TOTAL	15,392,499		22,147,167		33,813,817		896,274		10,851,981	
		30,576,328		5,726,253		107,656,064		12,892,050		



TABLE B-10  
Capital Costs of Each Aqueduct Reach to Be Reimbursed Through  
Capital Cost Component of Transportation Charge (Continued)

(in dollars)

Sheet 4 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN DIVISION (continued)								
	Reach 10A	Reach 11B	Reach 12D	Reach 12E	Reach 13B	Reach 14A	Reach 14B	Reach 14C	Reach 15A
	[29]	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]
1952	695	1,279	1,980	995	1,663	794	212	212	1,911
1953	2,569	4,790	7,480	3,745	6,236	2,599	733	741	7,016
1954	2,821	4,855	7,565	3,792	6,319	2,880	810	817	7,073
1955	1,097	1,557	2,404	1,211	2,025	1,183	325	327	2,253
1956	4,428	6,223	9,233	4,737	8,054	7,026	1,638	1,584	9,939
1957	13,269	18,772	29,082	14,615	24,411	15,651	3,834	3,864	26,871
1958	25,086	48,191	78,564	39,087	61,715	33,726	12,330	11,813	49,499
1959	25,787	67,246	107,781	53,836	86,478	64,824	22,102	21,828	70,838
1960	47,492	66,317	77,936	39,867	63,517	84,363	23,260	22,305	73,305
1961	68,505	46,073	88,274	51,457	28,015	242,753	91,290	65,565	150,205
1962	57,705	56,056	69,189	44,851	49,179	208,180	61,489	47,608	133,653
1963	52,585	91,914	173,985	86,405	67,733	425,626	104,436	77,970	102,072
1964	124,014	333,621	291,013	174,469	86,271	1,093,795	684,005	485,033	571,173
1965	622,257	1,053,029	1,524,848	1,044,851	196,487	3,385,205	1,655,024	1,436,258	476,830
1966	2,800,056	3,709,779	673,429	466,228	418,141	4,916,319	974,862	724,354	1,829,852
1967	3,652,342	4,636,627	1,881,333	1,244,265	1,238,428	2,788,299	525,653	400,183	1,721,304
1968	1,025,969	1,323,302	4,726,074	3,145,775	8,343,706	10,210,266	1,330,361	1,405,117	7,522,015
1969	145,111	229,185	706,272	529,080	3,704,065	15,112,041	1,223,457	1,134,395	9,523,012
1970	74,366	85,151	70,725	72,798	320,797	11,031,255	987,213	738,955	8,836,897
1971	15,595	45,006	43,988	42,624	339,078	2,925,191	193,255	36,514	3,275,227
1972	19,736	32,657	43,939	24,748	81,937	1,388,348	101,784	20,165	1,003,380
1973	14,283	16,448	9,980	16,320	25,090	680,834	19,584	13,469	798,805
1974	22,111	14,951	19,555	32,240	29,582	524,504	30,735	16,333	778,696
1975	15,865	13,479	10,793	13,678	25,827	269,197	25,164	21,048	370,265
1976	76,202	54,217	37,464	59,842	105,332	507,519	59,753	42,776	434,574
1977	75,628	52,919	22,826	54,444	81,293	301,515	49,972	30,152	235,514
1978	48,754	16,469	(2,816)	27,331	43,126	348,674	(653)	1,500	297,817
1979	241	6,906	13,401	14,229	25,411	293,786	9,846	7,856	245,590
1980	18,165	18,813	15,608	27,498	34,190	1,676,267	29,169	23,023	1,719,775
1981	10,290	15,324	28,246	21,872	25,503	(1,074,746)	28,974	34,604	(1,142,519)
1982	4,998	4,720	6,062	5,698	13,728	(765,128)	7,425	28,895	(824,559)
1983	11,779	8,644	13,203	11,327	33,879	405,749	15,572	23,066	101,962
1984	7,532	29,138	93,958	52,372	22,731	59,528	80,334	66,263	64,129
1985	7,985	6,247	4,730	7,000	7,987	(57,058)	8,523	5,030	47,797
1986	22,370	16,758	16,323	25,208	20,512	141,953	26,225	14,089	155,193
1987	18,202	14,639	13,408	21,548	16,318	108,251	22,095	9,471	234,170
1988	(157,320)	(73,065)	(151,171)	(51,789)	(121,731)	153,330	(73,887)	(74,284)	140,252
1989	77,153	69,388	66,546	125,966	78,231	2,807,445	125,456	41,764	2,983,764
1990	42,671	30,594	25,834	44,249	33,043	413,981	46,684	22,492	380,683
1991	112,217	66,953	37,720	64,124	63,181	602,577	94,300	65,067	516,764
1992	176,341	104,673	58,466	100,901	99,015	943,000	147,108	101,844	807,208
1993	21,689	12,259	9,430	13,202	13,202	99,015	16,974	12,259	82,041
1994	2,829	943	1,886	1,886	1,886	4,715	1,886	943	2,829
1995	1,886	943	943	943	943	3,772	943	943	2,829
1996	0	0	0	0	0	1,886	0	0	943
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	9,413,356	12,363,990	10,967,489	7,779,525	15,812,534	62,390,890	8,770,255	7,144,211	43,828,847

TABLE B-10  
Capital Costs of Each Aqueduct Reach to Be Reimbursed Through  
Capital Cost Component of Transportation Charge (Continued)

(in dollars)

Sheet 5 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN (contd.)		TEHACHAPI DIVISION			MOJAVE DIVISION			
	Reach 16A	Subtotal	Reach 17E	Reach 17F	Subtotal	Reach 18A	Reach 19	Reach 19C	Reach 20A
	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
1952	4,440	16,030	9,703	4,072	13,775	4,090	1,520	0	2,561
1953	16,513	59,323	31,337	13,284	44,621	12,810	4,685	0	7,246
1954	16,601	60,328	46,243	20,010	66,253	16,642	6,184	0	9,506
1955	5,223	19,612	25,880	11,362	37,242	5,612	2,086	0	2,529
1956	21,754	82,940	47,487	17,609	65,096	6,038	2,244	0	2,440
1957	62,657	237,073	119,673	49,130	168,803	22,348	8,304	0	9,035
1958	133,083	537,575	164,056	72,091	236,147	37,917	14,166	123	15,391
1959	205,748	773,179	151,389	57,883	209,272	38,620	23,450	1,102	23,605
1960	204,788	774,678	203,222	45,323	248,545	21,356	26,093	5,318	40,523
1961	206,305	1,148,969	387,819	85,558	473,377	35,664	32,281	2,262	34,918
1962	171,396	1,127,293	353,119	82,610	435,729	68,508	266,284	1,841	10,323
1963	481,941	1,913,123	1,191,633	124,757	1,316,390	37,379	435,881	4,137	39,706
1964	1,778,952	5,834,889	1,866,000	775,005	2,641,005	95,693	706,369	8,564	43,342
1965	1,268,176	13,733,092	2,574,824	2,284,869	4,859,693	121,060	716,092	9,156	108,519
1966	2,896,274	27,347,168	5,537,412	9,323,517	14,860,929	366,116	1,644,699	13,373	159,282
1967	3,442,021	30,089,234	26,239,390	12,398,708	38,638,098	1,312,022	903,880	24,103	645,078
1968	7,578,498	48,226,583	33,363,479	7,416,464	40,779,943	136,804	7,109,653	71,388	1,889,601
1969	13,136,056	45,702,910	40,368,425	6,883,206	47,251,631	213,805	2,465,641	7,423	5,939,151
1970	13,890,751	36,322,845	35,446,706	6,786,231	42,232,937	2,211,077	1,210,665	6,217	3,652,478
1971	7,903,937	14,885,415	20,141,395	6,835,303	26,976,698	1,496,843	284,738	6,994	1,074,759
1972	3,025,555	5,783,019	10,002,935	34,791	10,037,726	129,417	409,903	3,620	471,963
1973	1,472,313	3,096,609	3,090,140	36,207	3,126,347	23,931	75,638	2,539	88,416
1974	1,031,843	2,546,984	4,798,348	152,494	4,950,842	28,399	205,581	2,703	138,673
1975	489,545	1,289,211	2,144,178	411,404	2,555,582	44,774	70,662	5,066	68,157
1976	618,049	2,154,103	1,124,357	174,629	1,298,986	121,043	84,593	6,786	59,967
1977	580,209	1,673,525	655,047	31,512	686,559	261,400	133,767	7,521	117,878
1978	582,775	1,428,409	1,900,843	27,956	1,928,799	553,014	57,150	5,872	51,615
1979	542,554	1,182,702	2,099,385	61,381	2,160,766	743,615	339,536	10,831	37,085
1980	3,772,498	7,372,362	17,433,610	6,046	17,439,656	1,330,429	1,073,430	3,604	308,188
1981	(2,526,431)	(4,558,544)	(3,849,053)	6,903	(3,842,150)	1,344,813	845,669	4,498	48,603
1982	(1,881,096)	(3,388,426)	11,315,758	5,317	11,321,075	6,824,321	741,321	3,920	30,521
1983	145,222	797,567	8,827,373	7,322	8,834,695	10,682,338	61,202	2,596	37,390
1984	121,548	640,400	3,222,288	31,701	3,253,989	8,266,371	309,489	3,124	17,504
1985	71,876	132,311	1,910,128	10,029	1,920,157	5,261,495	226,294	3,885	67,153
1986	188,626	681,777	1,388,862	33,801	1,422,663	2,049,169	2,069,709	4,261	2,332,751
1987	201,065	749,943	673,923	14,141	688,064	1,351,725	2,313	4,684	565,247
1988	251,497	(329,790)	1,401,339	(48,772)	1,352,567	857,630	(94,103)	13,091	(156,120)
1989	5,998,069	12,761,679	621,347	66,643	687,990	392,128	220,724	50,611	39,097
1990	550,473	3,656,531	808,248	27,165	835,413	185,409	(359,119)	34,997	(629,207)
1991	786,462	2,673,405	1,161,776	18,860	1,180,636	301,760	179,170	0	218,776
1992	1,226,843	4,177,490	1,807,731	30,176	1,837,907	60,352	99,958	0	115,046
1993	125,419	454,526	178,227	4,715	182,942	3,772	12,259	0	12,259
1994	5,658	29,233	6,601	943	7,544	0	2,829	0	1,886
1995	4,715	21,689	6,601	0	6,601	0	1,886	0	943
1996	1,886	4,715	2,829	0	2,829	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	70,812,287	273,923,689	241,002,013	54,432,356	295,434,369	47,077,509	22,634,766	336,210	17,753,784

TABLE B-10  
Capital Costs of Each Aqueduct Reach to Be Reimbursed Through  
Capital Cost Component of Transportation Charge (Continued)

(in dollars)

Sheet 6 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	MOJAVE DIVISION (cont'd.)							SANTA ANA DIVISION	
	Reach 20B	Reach 21	Reach 22A	Reach 22B	Reach 23	Reach 24	Subtotal	Reach 25	Reach 26A
	[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]
1952	892	5,788	35	2,013	2,074	2,413	21,386	3,334	5,599
1953	3,402	17,846	71	5,752	6,886	7,438	65,936	10,275	17,264
1954	4,548	23,558	369	8,560	7,849	9,820	87,036	13,566	22,790
1955	2,213	7,947	178	2,754	2,725	3,313	29,357	4,575	7,687
1956	2,655	8,542	216	2,905	2,961	3,561	31,562	4,917	8,264
1957	9,826	31,616	800	10,757	10,962	13,177	116,825	18,205	30,586
1958	16,752	53,569	1,397	18,717	18,578	22,627	199,237	31,001	52,019
1959	18,604	56,724	1,844	25,421	20,372	45,646	255,388	39,325	58,137
1960	37,179	43,893	11,029	136,751	17,152	109,816	449,110	65,655	93,700
1961	37,102	21,532	14,517	215,859	9,546	373,473	777,154	26,979	56,734
1962	10,730	8,197	4,186	164,168	4,336	279,421	817,994	9,964	36,235
1963	40,865	26,670	17,081	237,695	7,228	358,503	1,205,145	31,013	112,271
1964	71,116	33,912	22,793	262,996	6,863	244,003	1,495,651	69,669	202,642
1965	343,506	91,095	65,689	827,655	11,836	621,566	2,916,174	279,237	206,356
1966	1,311,628	160,388	178,538	1,746,245	31,078	1,018,628	6,629,975	415,066	364,004
1967	1,718,942	498,257	367,961	3,146,128	62,135	2,331,106	11,008,612	3,184,296	638,539
1968	2,291,691	1,141,929	1,145,768	4,588,850	102,207	2,600,293	21,078,184	8,264,126	1,268,194
1969	5,626,284	2,358,737	1,515,147	7,750,478	260,659	11,131,406	37,268,731	6,807,783	1,768,456
1970	5,304,372	3,232,911	2,081,810	23,451,612	1,240,798	16,885,193	59,277,133	2,169,051	7,229,429
1971	1,091,123	825,070	432,464	16,772,680	1,922,115	5,385,721	29,292,507	1,135,248	9,811,736
1972	635,507	484,772	324,865	3,788,894	48,049	788,479	7,085,469	1,095,740	5,528,987
1973	83,840	63,774	36,179	1,623,274	24,333	4,225,877	6,247,801	136,994	1,810,729
1974	118,639	103,545	54,198	5,699,605	130,567	786,562	7,248,472	68,180	1,922,999
1975	169,294	167,240	19,453	4,793,580	19,467	373,783	5,731,466	166,653	3,787,797
1976	102,909	44,896	24,732	3,103,916	84,188	204,705	3,837,735	475,176	1,494,750
1977	120,160	71,389	49,445	1,654,122	60,112	232,230	2,708,024	76,255	776,085
1978	68,838	32,855	18,183	677,448	36,484	210,198	1,711,657	57,463	131,076
1979	36,225	18,948	10,675	560,506	10,634	103,615	1,871,670	29,960	80,482
1980	284,545	133,526	121,171	2,239,224	60,229	559,963	6,114,309	31,462	181,638
1981	32,194	13,211	6,458	(774,874)	138,908	203,929	1,863,409	5,861	68,934
1982	74,087	10,928	12,990	395,842	344,170	73,079	8,511,179	8,887	139,927
1983	55,818	23,930	9,098	424,785	2,029,895	51,334	13,378,386	4,155	514,813
1984	35,377	845,422	6,052	(84,369)	1,290,740	34,762	10,724,472	3,850	220,448
1985	(233,617)	(482,792)	1,943,902	597,693	965,508	49,530	8,399,051	5,265	17,064
1986	(2,046,180)	(1,334,894)	3,260,298	1,103,110	232,240	52,078	7,722,542	9,928	114,790
1987	(344,461)	56,281	65,145	3,662,004	148,938	93,865	5,605,741	4,953	34,918
1988	(155,824)	(72,391)	351,843	564,530	560,299	203,308	2,072,063	7,415	161,348
1989	58,298	31,761	537,505	4,235,514	1,506,276	449,537	7,521,451	8,617	(2,260,896)
1990	(467,637)	(646,533)	(100,466)	7,874,489	1,480,214	366,526	7,738,673	182,580	(1,961,648)
1991	173,512	209,346	77,326	13,124,674	8,886,832	243,294	23,414,690	14,145	454,526
1992	97,129	105,616	69,782	4,784,782	15,064,425	360,226	20,757,316	868,503	705,364
1993	11,316	11,316	7,544	163,139	7,248,841	34,891	7,505,337	6,294,525	67,896
1994	1,886	943	943	10,373	3,576,799	1,886	3,597,545	2,045,367	2,829
1995	943	943	943	7,544	599,748	943	613,893	0	2,829
1996	0	0	0	1,886	0	943	2,829	0	943
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	16,856,228	8,542,213	12,769,957	119,609,687	48,296,256	51,132,667	345,009,277	34,185,219	35,989,270

TABLE B-10  
Capital Costs of Each Aqueduct Reach to Be Reimbursed Through  
Capital Cost Component of Transportation Charge (Continued)

(in dollars)

Sheet 7 of 8

Calendar Year	CALIFORNIA AQUEDUCT (contd.)								
	SANTA ANA DIVISION (contd.)				WEST BRANCH				
	Reach 28G a)	Reach 28H	Reach 28J	Subtotal	Reach 29A	Reach 29F	Reach 29G	Reach 29H	Reach 29J
	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]	[64]
1952	4,785	4,055	3,020	20,793	2,924	136	175	459	553
1953	15,580	11,511	9,476	64,106	9,093	344	237	1,754	1,683
1954	18,015	18,100	12,180	84,631	7,389	1,201	2,229	2,350	4,162
1955	6,052	6,081	4,151	28,546	1,019	585	1,086	1,147	2,029
1956	6,496	6,525	4,480	30,682	490	698	1,297	1,366	2,420
1957	24,044	24,156	16,585	113,576	1,809	2,583	4,792	5,057	8,952
1958	40,844	41,033	28,470	193,367	3,256	4,516	8,714	8,878	15,847
1959	45,748	45,946	44,331	233,485	7,953	9,150	19,414	18,243	35,583
1960	59,102	58,548	118,969	395,974	21,753	14,990	34,447	29,764	69,752
1961	32,226	34,382	674,787	825,106	22,442	12,775	21,559	20,086	39,761
1962	21,383	20,530	47,484	135,596	40,237	28,729	86,938	58,215	108,962
1963	43,884	41,698	1,506,440	1,735,306	91,959	69,162	163,347	110,015	211,592
1964	89,710	45,762	98,569	506,352	150,670	66,420	207,977	143,340	291,404
1965	96,956	76,899	146,095	805,543	361,811	77,914	403,115	127,430	589,638
1966	170,878	308,756	589,107	1,847,811	489,512	203,497	1,233,640	348,918	3,231,797
1967	233,968	283,126	987,832	5,327,761	1,589,715	882,096	1,117,243	891,607	31,088,491
1968	871,337	266,295	780,587	11,450,539	3,899,363	300,921	396,190	1,104,832	36,157,768
1969	1,117,873	1,444,654	756,442	11,895,208	6,592,580	336,480	693,348	1,184,454	9,655,871
1970	1,843,621	1,013,468	2,829,523	15,085,092	7,986,733	6,089,401	2,624,747	3,002,968	8,463,475
1971	16,095,702	6,401,303	12,111,623	45,555,612	4,247,037	3,768,699	1,120,231	8,244,651	5,844,024
1972	1,537,880	11,960,791	21,542,747	41,666,145	1,871,831	426,932	985,512	18,787,722	(23,015,734)
1973	209,664	247,769	3,673,344	6,078,500	775,824	168,064	399,856	9,408,706	1,821,206
1974	162,178	101,638	1,980,991	4,235,986	560,657	168,878	169,717	3,901,261	(3,454,239)
1975	157,365	124,399	1,626,274	5,862,488	353,670	421,176	925,693	664,113	609,891
1976	178,287	118,748	1,497,465	3,764,426	396,809	650,417	1,274,484	706,244	650,209
1977	127,106	89,036	323,091	1,391,573	419,901	3,018,637	2,152,961	196,012	1,135,148
1978	147,112	153,867	347,482	837,000	1,427,190	2,219,135	6,694,615	57,817	149,932
1979	29,723	19,225	225,947	385,337	940,013	2,168,382	19,813,742	597,858	331,313
1980	137,833	154,821	1,077,900	1,583,654	1,276,793	4,108,143	24,537,814	550,337	204,751
1981	28,804	22,647	61,323	187,569	(711,933)	2,699,859	19,806,507	94,795	28,838
1982	13,697	57,386	37,860	257,757	(488,222)	348,325	17,953,359	168,981	40,158
1983	16,051	88,515	(269,781)	353,753	85,883	179,938	7,081,245	215,277	21,801
1984	14,461	12,258	49,544	300,561	71,301	68,930	2,870,253	335,941	17,284
1985	17,008	10,954	49,394	99,685	134,003	24,204	2,124,995	95,971	21,231
1986	31,591	25,059	86,862	268,230	134,675	62,315	274,916	142,077	36,194
1987	17,891	8,628	48,861	115,251	20,799	454,791	719,227	194,366	28,194
1988	41,558	21,197	95,466	326,984	428,183	108,293	1,675,510	196,687	91,540
1989	32,543	15,507	67,024	(2,137,205)	248,253	422,010	609,974	258,662	102,337
1990	30,288	16,022	78,864	(1,653,894)	182,866	269,861	398,402	814,427	47,843
1991	67,896	35,834	456,412	1,028,813	573,344	100,901	441,324	3,914,393	74,497
1992	106,559	54,694	709,136	2,444,256	890,192	150,880	2,512,152	605,406	107,502
1993	12,259	6,601	67,896	6,449,177	85,813	15,088	4,847,020	57,523	11,316
1994	1,886	1,886	2,829	2,054,797	2,829	943	1,073,134	2,829	1,886
1995	943	943	2,829	7,544	2,829	943	943	1,886	943
1996	0	0	943	1,886	1,886	0	0	943	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	23,958,785	23,501,253	54,610,834	172,245,361	35,213,134	30,127,342	127,484,081	57,295,768	74,887,805

a) Includes excess capacity costs (not shown in Table B-9) allocated to MWDSC in the following years and repaid under Article 24(c) of its contract: 1970 - \$362,000; 1971 - \$6,198,000; 1972 - \$139,000.

TABLE B-10  
Capital Costs of Each Aqueduct Reach to Be Reimbursed Through  
Capital Cost Component of Transportation Charge (Continued)

(in dollars)

Sheet 8 of 8

Calendar Year	CALIFORNIA AQUEDUCT (contd.)								GRAND TOTAL
	WEST BRANCH (continued)		COASTAL BRANCH					Total	
	Reach 30	Subtotal	Reach 31A	Reach 33A	Reach 34	Reach 35	Subtotal		
	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]
1952	1,408	5,655	0	0	0	0	0	98,857	99,353
1953	4,346	17,457	0	0	0	0	0	309,387	311,812
1954	5,743	23,074	0	0	0	0	0	394,688	402,143
1955	1,943	7,809	0	0	0	0	0	159,842	169,342
1956	2,077	8,348	0	0	0	0	0	255,679	351,551
1957	7,684	30,877	0	0	0	0	0	708,753	1,464,452
1958	13,931	55,142	0	0	0	0	0	1,331,616	2,286,621
1959	44,384	134,727	28,046	49,114	7,441	8,236	92,837	2,096,392	2,967,398
1960	84,703	255,409	34,404	70,450	8,507	14,265	127,626	2,937,049	4,660,805
1961	123,330	239,953	13,801	17,868	1,501	3,931	37,101	4,650,264	8,545,234
1962	348,366	671,447	10,121	7,798	524	1,689	20,132	5,827,774	8,875,139
1963	521,491	1,167,566	20,470	14,299	880	2,943	38,592	18,981,487	24,610,227
1964	1,372,464	2,232,275	315,418	26,963	1,687	5,639	349,707	31,550,813	41,736,214
1965	3,383,950	4,943,858	747,023	36,178	2,118	7,060	792,379	57,936,405	62,664,743
1966	9,364,753	14,872,117	2,258,915	35,864	1,736	5,764	2,302,279	124,748,128	129,110,330
1967	17,618,827	53,187,979	6,310,419	38,331	1,891	6,213	6,356,854	187,465,580	194,146,365
1968	15,736,691	57,595,765	2,707,580	30,784	1,324	4,369	2,744,057	192,593,079	197,978,911
1969	16,228,175	34,690,908	423,797	26,549	907	2,905	454,158	182,530,023	184,473,490
1970	22,330,328	50,497,652	269,194	24,368	851	2,787	297,200	206,720,774	207,082,650
1971	16,890,503	40,115,145	164,446	32,230	1,315	3,804	201,795	158,414,033	158,624,739
1972	3,818,001	2,874,264	131,332	17,601	522	1,660	151,115	68,228,670	68,362,291
1973	13,426,222	25,999,878	182,493	16,154	542	1,758	200,947	45,110,823	45,263,853
1974	2,988,318	4,334,592	190,866	18,799	463	1,405	211,533	24,036,199	24,402,166
1975	1,808,235	4,782,778	64,582	36,012	2,255	6,656	109,505	21,065,768	21,318,838
1976	1,253,067	4,931,230	198,266	68,898	5,088	14,988	287,240	17,183,961	17,492,910
1977	345,023	7,267,682	918,473	81,305	1,834	5,387	1,006,999	15,195,065	15,573,646
1978	763,445	11,312,134	52,994	83,300	1,302	3,852	141,448	18,661,117	19,119,151
1979	282,145	24,133,453	38,182	108,951	1,505	4,433	153,071	31,319,118	31,974,362
1980	2,055,206	32,733,044	189,070	342,118	1,059	3,113	535,360	74,056,754	75,152,486
1981	275,379	22,193,445	19,809	(209,650)	1,284	3,778	(184,779)	15,418,613	15,914,597
1982	338,464	18,381,065	(28,714)	(162,459)	472	1,381	(189,320)	37,584,631	39,008,261
1983	556,120	8,140,264	75,848	14,183	684	2,006	92,721	34,653,208	37,973,571
1984	1,118,950	4,482,659	28,489	11,705	601	1,761	42,556	24,364,452	30,292,425
1985	276,457	2,676,861	31,439	21,425	1,483	4,361	58,708	14,837,347	28,452,223
1986	213,567	863,744	82,589	155,421	13,503	39,830	291,343	13,501,339	43,222,342
1987	162,684	1,680,061	58,120	979,328	87,514	258,214	1,383,176	12,522,176	35,153,861
1988	227,732	2,727,945	177,811	1,058,564	94,571	279,029	1,608,975	11,681,682	18,853,704
1989	168,426	1,809,662	107,595	821,907	73,282	216,215	1,218,999	31,252,128	34,134,164
1990	140,427	1,853,826	129,227	970,194	86,982	256,654	1,443,057	30,097,591	31,854,960
1991	560,142	5,664,601	464,000	3,414,832	309,725	624,777	4,813,334	58,483,937	59,168,841
1992	773,260	5,039,392	731,000	16,498,383	4,925,393	2,082,232	24,237,008	69,999,939	71,693,867
1993	81,098	5,097,858	88,000	74,119,067	5,079,944	3,720,011	83,007,022	110,608,188	112,563,504
1994	11,316	1,092,937	4,000	81,091,803	7,833,793	13,507,597	102,437,193	110,843,682	112,419,210
1995	11,316	18,860	3,000	47,324,678	9,852,481	16,556,111	73,736,270	74,448,283	74,462,811
1996	9,430	12,259	1,000	5,797,500	1,425,000	2,181,500	9,405,000	9,456,105	9,463,633
1997	4,715	4,715	0	175,000	0	0	175,000	180,382	184,146
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	135,754,242	460,762,372	17,243,105	233,265,815	29,831,964	39,848,314	320,189,198	2,154,501,781	2,304,037,342

TABLE B-11

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed Through  
Minimum OMP&R Component of Transportation Charge**

(in dollars)

Sheet 1 of 8

Calendar Year	UPPER FEATHER DIVISION	NORTH BAY AQUEDUCT					SOUTH BAY AQUEDUCT			
		Reach 1	Reach 2	Reach 3A	Reach 3B	Total	Reach 1	Reach 2	Reach 4	Reach 5
		[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	37,396	5,522	0	0
1963	0	0	0	0	0	0	147,719	20,639	0	0
1964	0	0	0	0	0	0	149,750	15,574	19,405	0
1965	0	0	0	0	0	0	259,939	45,718	46,485	0
1966	0	0	0	0	0	0	270,890	23,799	63,921	0
1967	0	0	0	0	0	0	438,050	32,798	108,127	0
1968	0	0	0	0	130	130	410,919	44,277	66,973	706
1969	0	0	0	0	80,875	80,875	487,377	48,339	75,644	706
1970	0	0	0	0	94,872	94,872	381,794	44,852	64,833	71,376
1971	54	0	0	0	45,579	45,579	357,850	25,666	50,344	38,735
1972	40	0	0	0	37,895	37,895	347,941	30,606	56,800	100,106
1973	1	0	0	0	32,993	32,993	386,897	36,172	58,288	28,810
1974	143	0	0	0	46,498	46,498	456,381	57,081	83,120	61,823
1975	1,069	0	0	0	37,707	37,707	624,989	46,111	81,361	36,682
1976	139	0	0	0	60,786	60,786	614,362	47,862	123,838	91,096
1977	892	0	0	0	78,400	78,400	511,065	48,926	104,280	102,083
1978	39	0	0	0	56,318	56,318	671,195	125,224	176,855	50,289
1979	3,235	0	0	0	73,852	73,852	650,826	76,849	212,826	91,380
1980	416	0	0	0	81,770	81,770	1,128,863	212,974	242,118	110,792
1981	3,847	0	0	0	100,783	100,783	882,773	130,119	167,077	201,941
1982	10,956	0	0	0	222,133	222,133	1,170,235	143,563	252,423	118,318
1983	(422)	0	0	0	82,474	82,474	1,267,825	91,005	378,182	170,247
1984	643	0	0	0	145,498	145,498	1,982,123	113,792	340,334	33,736
1985	2,599	0	0	0	256,895	256,895	2,061,159	208,513	427,965	266,235
1986	2,595	0	0	0	230,215	230,215	1,827,713	289,091	305,198	208,738
1987	2,595	0	0	0	310,955	310,955	2,132,796	165,107	400,592	286,909
1988	2,600	0	0	0	334,042	334,042	2,051,873	186,638	302,787	364,138
1989	2,672	509,160	201,633	206,755	401,270	1,318,818	2,142,939	171,820	324,416	458,859
1990	2,687	521,564	238,515	93,538	413,040	1,266,657	2,215,254	244,157	359,325	520,084
1991	2,730	653,964	203,198	334,080	265,787	1,457,029	3,019,481	317,366	454,800	363,506
1992	2,774	853,619	197,881	404,090	353,950	1,809,540	3,359,207	400,218	506,722	456,265
1993	2,912	871,866	211,494	401,221	365,918	1,850,499	3,185,510	432,641	538,743	471,197
1994	3,058	791,752	215,547	377,750	316,005	1,701,054	3,081,701	387,513	549,891	474,566
1995	3,058	784,501	217,025	380,493	318,182	1,700,201	3,091,387	390,393	553,894	481,555
1996	3,058	788,033	217,943	382,249	319,427	1,707,652	3,103,266	391,990	556,244	485,725
1997	3,058	790,067	218,163	383,282	320,059	1,711,571	3,106,973	392,385	557,111	487,277
1998	3,058	790,204	218,172	383,351	320,098	1,711,825	3,107,155	392,197	557,159	488,731
1999	3,058	790,099	218,172	383,295	320,070	1,711,636	3,107,064	392,189	557,134	488,605
2000	3,058	790,928	218,177	383,729	320,294	1,713,128	3,107,782	392,261	557,338	487,627
2001	3,058	790,967	218,177	383,749	320,306	1,713,199	3,107,815	392,265	557,347	487,668
2002	3,058	791,133	218,178	383,836	320,351	1,713,498	3,107,958	392,279	557,388	487,875
2003	3,058	791,366	218,180	383,957	320,414	1,713,917	3,108,158	392,299	557,444	488,155
2004	3,058	791,820	218,183	384,195	320,537	1,714,735	3,108,551	392,339	557,556	488,715
2005	3,058	793,090	218,191	384,857	320,878	1,717,016	3,109,648	392,451	557,869	490,282
2006	3,058	793,060	218,191	384,841	320,870	1,716,962	3,109,621	392,448	557,860	490,233
2007	3,058	793,147	218,192	384,887	320,893	1,717,119	3,109,696	392,455	557,882	490,349
2008	3,058	793,295	218,193	384,965	320,934	1,717,387	3,109,825	392,468	557,918	490,527
2009	3,058	793,478	218,194	385,060	320,984	1,717,716	3,109,983	392,484	557,961	490,745
2010	3,058	793,719	218,196	385,186	321,049	1,718,150	3,110,192	392,505	558,022	491,048
2011	3,058	793,771	218,197	385,213	321,062	1,718,243	3,110,235	392,509	558,034	491,107
2012	3,058	793,865	218,197	385,262	321,088	1,718,412	3,110,316	392,519	558,058	491,224
2013	3,058	794,766	218,203	385,732	321,330	1,720,031	3,111,094	392,597	558,276	492,318
2014	3,058	795,088	218,205	385,900	321,418	1,720,611	3,111,373	392,625	558,359	492,732
2015	3,058	795,072	218,205	385,892	321,413	1,720,582	3,111,359	392,624	558,355	492,715
2016	3,058	795,062	218,206	385,886	321,410	1,720,564	3,111,350	392,624	558,353	492,700
2017	3,058	795,773	218,210	386,257	321,602	1,721,842	3,111,964	392,686	558,526	493,567
2018	3,058	795,722	218,210	386,231	321,589	1,721,752	3,111,920	392,681	558,513	493,502
2019	3,058	795,736	218,210	386,238	321,593	1,721,777	3,111,932	392,682	558,516	493,518
2020	3,058	795,421	218,209	386,073	321,509	1,721,212	3,111,659	392,655	558,439	493,133
2021	3,058	795,435	218,209	386,081	321,513	1,721,238	3,111,671	392,655	558,440	493,141
2022	3,058	795,408	218,209	386,067	321,506	1,721,190	3,111,647	392,652	558,431	493,093
2023	3,058	795,436	218,209	386,081	321,513	1,721,239	3,111,670	392,654	558,436	493,128
2024	3,058	795,369	218,209	386,046	321,495	1,721,119	3,111,613	392,648	558,422	493,051
2025	3,058	795,420	218,209	386,073	321,509	1,721,211	3,111,656	392,652	558,432	493,096
2026	3,058	795,424	218,209	386,075	321,510	1,721,218	3,111,660	392,652	558,432	493,100
2027	3,058	795,399	218,209	386,061	321,503	1,721,172	3,111,638	392,650	558,427	493,073
2028	3,058	795,435	218,209	386,081	321,513	1,721,238	3,111,689	392,653	558,434	493,114
2029	3,058	795,402	218,209	386,063	321,504	1,721,176	3,111,641	392,651	558,427	493,074
2030	3,058	795,443	218,209	386,085	321,515	1,721,252	3,111,675	392,653	558,437	493,120
2031	3,058	795,426	218,209	386,076	321,510	1,721,221	3,111,662	392,652	558,433	493,104
2032	3,058	795,403	218,209	386,063	321,504	1,721,179	3,111,641	392,651	558,428	493,077
2033	3,058	795,455	218,209	386,091	321,518	1,721,273	3,111,686	392,654	558,439	493,132
2034	3,058	795,415	218,209	386,070	321,508	1,721,202	3,111,653	392,651	558,430	493,089
2035	3,058	795,316	218,208	386,018	321,481	1,721,023	3,111,566	392,642	558,405	492,963
TOTAL	173,652	36,742,294	10,212,981	17,608,081	17,688,602	82,252,958	166,227,736	20,361,912	29,819,684	25,313,111

TABLE B-11

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed Through  
Minimum OMP&R Component of Transportation Charge (Continued)**

(in dollars)

Sheet 2 of 8

Calendar Year	SOUTH BAY AQUEDUCT (continued)					CALIFORNIA AQUEDUCT NORTH SAN JOAQUIN DIVISION			
	Reach 6	Reach 7	Reach 8	Reach 9	Total	Reach 1	Reach 2A	Reach 2B	Subtotal
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	42,918	0	0	0	0
1963	0	0	0	0	168,358	0	0	0	0
1964	0	0	0	0	184,729	0	0	0	0
1965	2,634	6,490	4,704	12,904	378,874	0	0	0	0
1966	4,707	10,328	9,233	25,519	408,397	0	0	0	0
1967	2,712	7,659	10,812	34,347	634,505	0	0	0	0
1968	3,109	7,960	10,166	40,372	584,482	1,001,998	228,359	103,116	1,333,473
1969	3,944	5,975	8,795	38,566	669,346	933,116	301,596	188,194	1,422,906
1970	2,464	(1,991)	6,870	28,210	598,348	971,602	306,198	151,539	1,429,339
1971	3,116	9,394	9,895	31,068	526,068	1,103,021	254,786	113,694	1,471,501
1972	5,125	10,247	12,054	44,699	607,578	1,107,855	230,906	110,109	1,448,870
1973	4,178	7,500	4,890	43,816	570,551	1,150,864	221,445	100,221	1,472,530
1974	7,812	7,564	5,523	48,054	727,158	1,272,034	231,383	117,156	1,620,573
1975	18,120	14,683	18,325	68,377	908,648	1,434,736	455,110	201,075	2,090,921
1976	10,873	5,557	19,920	49,921	963,429	1,519,801	217,348	453,400	2,190,549
1977	(240)	2,228	8,391	89,579	866,312	1,917,994	292,380	196,564	2,406,938
1978	(1,404)	16,766	(5,313)	104,078	1,137,690	1,860,456	306,503	188,214	2,355,173
1979	1,269	29,294	7,351	106,835	1,176,630	1,848,109	231,339	145,205	2,224,653
1980	3,821	24,270	17,404	110,852	1,850,894	2,365,408	472,660	247,608	3,085,676
1981	4,038	20,110	17,587	98,150	1,521,795	2,651,829	434,180	153,908	3,239,917
1982	2,282	23,145	22,313	204,963	1,937,242	3,228,048	607,940	247,699	4,083,687
1983	4,427	53,280	76,055	218,460	2,259,481	4,269,756	810,288	275,538	5,355,582
1984	4,449	44,017	23,563	455,046	3,007,060	4,732,554	810,709	291,632	5,834,895
1985	19,556	79,482	67,032	238,071	3,368,013	5,699,288	812,035	278,306	6,789,629
1986	20,758	49,604	59,136	363,372	3,123,610	5,744,258	996,096	391,590	7,131,944
1987	17,722	25,182	38,445	416,375	3,483,128	5,958,071	1,146,104	451,148	7,555,323
1988	30,121	40,108	48,621	336,848	3,361,134	5,667,465	877,833	386,425	6,931,723
1989	13,802	47,418	101,396	211,441	3,471,891	5,654,730	890,310	843,251	7,388,291
1990	32,020	60,465	103,681	271,429	3,806,415	7,050,478	1,135,656	865,808	9,051,942
1991	104,451	86,385	79,497	264,951	4,690,417	8,004,961	1,422,814	346,905	9,774,680
1992	79,817	66,968	81,388	341,901	5,292,486	8,762,789	1,558,043	498,813	10,819,645
1993	72,906	65,096	89,333	362,662	5,218,088	9,105,141	1,599,555	510,049	11,214,745
1994	74,320	66,359	79,502	320,001	5,033,853	8,990,951	1,614,827	486,250	11,092,028
1995	74,860	66,753	80,089	322,246	5,061,177	9,024,167	1,627,156	489,981	11,141,304
1996	75,176	67,036	80,328	323,508	5,083,273	9,058,440	1,634,399	492,112	11,184,951
1997	75,249	67,102	80,408	323,822	5,090,327	9,071,350	1,639,617	493,562	11,204,016
1998	75,251	67,104	80,409	323,833	5,089,839	9,072,011	1,639,617	493,720	11,205,348
1999	75,251	67,104	80,409	323,833	5,089,589	9,071,552	1,639,392	493,652	11,204,596
2000	75,251	67,104	80,409	323,833	5,091,605	9,075,162	1,641,428	494,274	11,210,864
2001	75,251	67,104	80,409	323,833	5,091,692	9,075,325	1,641,476	494,289	11,211,090
2002	75,251	67,104	80,409	323,833	5,092,097	9,076,048	1,641,898	494,418	11,212,364
2003	75,251	67,104	80,409	323,833	5,092,653	9,077,056	1,642,420	494,577	11,214,053
2004	75,251	67,104	80,409	323,833	5,093,758	9,079,031	1,643,545	494,921	11,217,497
2005	75,251	67,104	80,409	323,833	5,096,847	9,084,553	1,646,677	495,879	11,227,109
2006	75,251	67,104	80,409	323,833	5,096,759	9,084,415	1,646,524	495,831	11,226,770
2007	75,251	67,104	80,409	323,833	5,096,979	9,084,795	1,646,805	495,918	11,227,518
2008	75,251	67,104	80,409	323,833	5,097,335	9,085,439	1,647,123	496,015	11,228,577
2009	75,251	67,104	80,409	323,833	5,097,770	9,086,233	1,647,523	496,137	11,229,893
2010	75,251	67,104	80,409	323,833	5,098,364	9,087,283	1,648,156	496,331	11,231,770
2011	75,251	67,104	80,409	323,833	5,098,482	9,087,503	1,648,255	496,361	11,232,119
2012	75,251	67,104	80,409	323,833	5,098,714	9,087,915	1,648,505	496,437	11,232,857
2013	75,251	67,104	80,409	323,833	5,100,882	9,091,822	1,650,594	497,075	11,239,481
2014	75,251	67,104	80,409	323,833	5,101,686	9,093,227	1,651,512	497,355	11,242,094
2015	75,251	67,104	80,409	323,833	5,101,650	9,093,159	1,651,493	497,350	11,242,002
2016	75,251	67,104	80,409	323,833	5,101,624	9,093,110	1,651,460	497,341	11,241,911
2017	75,251	67,104	80,409	323,833	5,103,340	9,096,200	1,653,132	497,853	11,247,185
2018	75,251	67,104	80,409	323,833	5,103,213	9,095,976	1,653,002	497,812	11,246,790
2019	75,251	67,104	80,409	323,833	5,103,245	9,096,037	1,653,020	497,818	11,246,875
2020	75,251	67,104	80,409	323,833	5,102,483	9,094,667	1,652,267	497,588	11,244,522
2021	75,251	67,104	80,409	323,833	5,102,504	9,094,724	1,652,228	497,575	11,244,527
2022	75,251	67,104	80,409	323,833	5,102,420	9,094,601	1,652,058	497,524	11,244,183
2023	75,251	67,104	80,409	323,833	5,102,487	9,094,719	1,652,135	497,547	11,244,401
2024	75,251	67,104	80,409	323,833	5,102,331	9,094,432	1,652,007	497,509	11,243,948
2025	75,251	67,104	80,409	323,833	5,102,433	9,094,650	1,651,988	497,502	11,244,140
2026	75,251	67,104	80,409	323,833	5,102,441	9,094,668	1,651,988	497,502	11,244,158
2027	75,251	67,104	80,409	323,833	5,102,385	9,094,558	1,651,959	497,493	11,244,010
2028	75,251	67,104	80,409	323,833	5,102,467	9,094,715	1,652,017	497,512	11,244,244
2029	75,251	67,104	80,409	323,833	5,102,390	9,094,570	1,651,951	497,491	11,244,012
2030	75,251	67,104	80,409	323,833	5,102,482	9,094,747	1,652,028	497,515	11,244,290
2031	75,251	67,104	80,409	323,833	5,102,448	9,094,675	1,652,010	497,509	11,244,194
2032	75,251	67,104	80,409	323,833	5,102,394	9,094,575	1,651,964	497,496	11,244,034
2033	75,251	67,104	80,409	323,833	5,102,508	9,094,799	1,652,021	497,514	11,244,334
2034	75,251	67,104	80,409	323,833	5,102,420	9,094,629	1,651,970	497,497	11,244,096
2035	75,251	67,104	80,409	323,833	5,102,173	9,094,193	1,651,714	497,419	11,243,326
TOTAL	3,637,332	3,642,386	4,332,936	18,256,097	271,591,194	476,549,044	86,032,924	28,690,628	591,272,596

TABLE B-11  
Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed Through  
Minimum OMP&R Component of Transportation Charge (Continued)

(in dollars)

Sheet 3 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SAN LUIS DIVISION						SOUTH SAN JOAQUIN DIVISION		
	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Subtotal	Reach 8C	Reach 8D	Reach 9
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	120,038	428,308	130,105	44,591	104,033	827,075	0	0	0
1969	90,033	460,907	184,467	35,696	235,322	1,006,425	22,013	134,760	86,103
1970	89,547	484,300	226,002	66,070	192,582	1,058,501	26,207	156,981	128,273
1971	99,917	541,574	175,592	64,193	158,170	1,039,446	32,312	190,753	118,372
1972	116,708	647,979	174,519	73,670	154,783	1,167,659	35,031	187,242	130,396
1973	116,791	611,705	158,145	58,344	153,955	1,098,940	51,150	225,747	127,530
1974	120,309	671,455	150,835	63,905	150,230	1,156,734	34,752	199,127	131,298
1975	133,593	839,285	178,974	81,478	157,586	1,390,916	78,523	250,377	159,006
1976	54,938	883,956	220,832	90,305	174,835	1,424,866	39,348	133,933	123,424
1977	73,331	1,114,465	270,734	98,132	196,311	1,752,973	38,086	121,348	178,078
1978	45,867	898,992	203,261	106,938	203,079	1,458,137	45,552	178,805	129,928
1979	223,973	842,508	144,055	99,670	180,734	1,490,940	69,973	150,679	129,756
1980	243,507	1,176,613	222,942	127,625	281,860	2,052,547	57,726	274,848	185,155
1981	257,960	1,070,474	198,142	92,351	1,614,709	3,233,636	80,109	197,027	142,982
1982	282,217	1,254,500	212,263	115,986	1,452,763	3,317,729	60,238	272,545	236,343
1983	216,120	1,955,171	342,945	132,602	2,157,053	4,803,891	49,883	386,922	225,128
1984	241,123	2,180,916	335,638	164,023	2,111,619	5,033,319	42,189	459,531	301,638
1985	322,850	3,000,792	362,218	177,068	1,606,509	5,469,437	64,915	549,817	255,945
1986	431,603	2,942,343	479,257	253,724	613,579	4,720,506	93,913	504,422	612,801
1987	395,830	3,136,857	430,193	237,341	458,037	4,658,258	123,007	494,215	503,325
1988	644,204	3,013,161	478,559	237,607	686,833	5,040,364	99,753	405,706	432,776
1989	293,700	3,149,586	342,242	294,064	615,481	4,695,073	89,153	409,723	415,164
1990	486,929	3,758,380	593,676	441,458	748,493	6,028,936	114,130	453,644	520,245
1991	576,538	3,829,278	749,577	366,894	519,772	6,042,059	177,357	690,904	552,599
1992	667,318	4,389,174	878,733	437,822	519,617	6,892,224	209,872	805,783	657,261
1993	673,426	4,188,356	886,680	431,822	527,773	6,708,057	229,550	879,650	714,039
1994	672,310	3,934,441	857,017	395,780	543,210	6,402,758	233,580	900,334	731,621
1995	686,683	3,975,489	867,509	400,582	549,786	6,480,029	235,285	907,336	737,274
1996	695,162	4,000,671	873,826	403,417	553,617	6,526,693	236,285	911,397	740,694
1997	700,305	4,013,522	878,479	405,097	555,807	6,553,210	236,551	914,028	743,047
1998	700,854	4,014,452	878,949	405,253	556,008	6,555,516	236,561	914,282	743,281
1999	700,617	4,013,852	878,724	405,182	555,918	6,554,293	236,559	914,163	743,170
2000	702,775	4,018,763	880,832	405,854	556,766	6,564,990	236,581	915,273	744,209
2001	702,825	4,018,964	880,891	405,872	556,791	6,565,343	236,582	915,304	744,238
2002	703,274	4,019,960	881,338	406,014	556,970	6,567,556	236,587	915,538	744,458
2003	703,824	4,021,317	881,901	406,194	557,197	6,570,433	236,593	915,836	744,736
2004	705,016	4,024,007	883,063	406,566	557,865	6,576,317	236,604	916,446	745,308
2005	708,337	4,031,546	886,337	407,610	558,984	6,592,814	236,637	918,169	746,920
2006	708,177	4,031,325	886,198	407,586	558,928	6,592,194	236,636	918,096	746,852
2007	708,474	4,031,874	886,473	407,654	559,038	6,593,513	236,639	918,241	746,988
2008	708,811	4,032,731	886,818	407,764	559,179	6,595,303	236,643	918,423	747,158
2009	709,233	4,033,792	887,251	407,901	559,352	6,597,529	236,648	918,650	747,371
2010	709,906	4,035,241	887,898	408,108	559,612	6,600,765	236,654	918,990	747,689
2011	710,010	4,035,527	888,005	408,143	559,657	6,601,342	236,654	919,046	747,743
2012	710,275	4,036,096	888,261	408,224	559,760	6,602,616	236,657	919,182	747,868
2013	712,490	4,041,384	890,496	408,939	560,659	6,613,968	236,681	920,357	748,970
2014	713,463	4,043,347	891,403	409,228	561,025	6,618,486	236,691	920,835	749,417
2015	713,441	4,043,262	891,377	409,218	561,014	6,618,312	236,690	920,820	749,404
2016	713,408	4,043,203	891,359	409,212	561,006	6,618,188	236,690	920,812	749,395
2017	715,179	4,047,372	893,111	409,771	561,713	6,627,146	236,707	921,733	750,258
2018	715,043	4,047,065	892,976	409,729	561,659	6,626,472	236,706	921,663	750,192
2019	715,061	4,047,139	892,999	409,737	561,669	6,626,605	236,706	921,675	750,204
2020	714,265	4,045,286	892,212	409,484	561,351	6,622,598	236,698	921,261	749,816
2021	714,223	4,045,319	892,172	409,472	561,335	6,622,521	236,698	921,240	749,796
2022	714,044	4,045,100	892,016	409,423	561,272	6,621,855	236,696	921,157	749,719
2023	714,123	4,045,249	892,070	409,440	561,293	6,622,175	236,697	921,185	749,745
2024	713,989	4,044,861	891,909	409,388	561,228	6,621,375	236,695	921,101	749,665
2025	713,968	4,045,086	891,917	409,390	561,233	6,621,594	236,695	921,105	749,670
2026	713,967	4,045,106	891,920	409,391	561,234	6,621,618	236,695	921,106	749,671
2027	713,937	4,044,972	891,881	409,379	561,217	6,621,386	236,695	921,086	749,652
2028	713,998	4,045,169	891,948	409,400	561,245	6,621,760	236,695	921,122	749,685
2029	713,929	4,044,983	891,878	409,378	561,217	6,621,385	236,695	921,085	749,650
2030	714,011	4,045,210	891,961	409,405	561,250	6,621,837	236,696	921,129	749,693
2031	713,991	4,045,123	891,936	409,396	561,239	6,621,685	236,695	921,115	749,679
2032	713,943	4,044,992	891,888	409,382	561,221	6,621,426	236,695	921,090	749,655
2033	714,002	4,045,266	891,967	409,407	561,253	6,621,895	236,696	921,132	749,695
2034	713,948	4,045,051	891,898	409,385	561,224	6,621,506	236,695	921,094	749,661
2035	713,677	4,044,476	891,667	409,311	561,132	6,620,263	236,694	920,974	749,547
TOTAL	36,787,338	216,828,626	45,985,317	21,517,965	39,438,652	360,557,898	11,899,479	47,289,100	38,581,029



TABLE B-11

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed Through  
Minimum OMP&R Component of Transportation Charge (Continued)**

(in dollars)

Sheet 4 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN DIVISION (continued)								
	Reach 10A	Reach 11B	Reach 12D	Reach 12E	Reach 13B	Reach 14A	Reach 14B	Reach 14C	Reach 15A
	[29]	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	83,706	59,077	0	0	0	0	0	0	0
1970	118,046	85,758	94,171	123,374	152,424	0	0	0	0
1971	129,811	80,282	95,075	91,389	167,142	691,791	151,979	111,623	529,723
1972	117,626	84,287	98,647	115,592	146,096	877,535	124,831	101,479	609,058
1973	117,706	92,257	74,238	114,843	221,385	961,855	120,106	99,429	692,748
1974	141,658	98,103	74,914	193,523	141,540	898,272	143,866	115,649	853,098
1975	207,908	124,105	61,799	117,194	108,154	1,156,757	180,614	119,889	988,045
1976	139,134	69,715	33,655	147,908	134,063	1,124,051	177,086	114,133	1,037,799
1977	194,086	108,644	91,547	175,039	137,975	1,397,006	203,837	119,467	1,339,196
1978	168,634	106,702	72,585	170,578	151,120	1,254,043	139,662	132,224	1,265,813
1979	175,107	85,942	56,331	174,147	150,029	1,490,461	201,935	260,981	1,216,126
1980	284,207	120,896	123,120	167,249	164,749	1,988,704	189,132	238,607	1,437,678
1981	198,635	76,198	32,210	112,420	170,426	1,737,765	165,911	162,587	1,791,641
1982	268,305	160,136	144,320	226,910	226,762	1,813,322	197,532	16,221	1,954,963
1983	311,656	137,600	125,887	205,605	219,448	2,434,629	201,617	183,819	2,563,718
1984	397,452	184,635	109,653	188,141	246,132	3,279,471	329,486	204,319	3,177,992
1985	347,490	253,344	207,378	238,283	361,576	3,544,979	236,677	179,748	3,519,458
1986	440,849	267,653	261,662	363,421	350,971	3,746,277	320,838	360,048	3,533,742
1987	555,266	403,144	395,078	530,236	331,018	3,748,383	460,645	239,288	4,119,796
1988	547,056	301,701	236,988	389,109	327,571	3,482,572	409,478	308,416	3,802,507
1989	738,433	285,439	229,664	552,002	381,879	3,484,520	351,058	233,315	3,731,144
1990	656,400	368,782	253,219	481,894	605,256	4,283,342	450,872	239,743	3,873,174
1991	605,544	470,198	391,224	603,490	632,977	4,942,340	584,083	357,667	4,824,575
1992	788,883	507,696	559,181	733,924	751,802	5,017,889	676,199	431,172	4,876,822
1993	821,091	553,418	605,729	792,117	826,283	5,171,338	693,564	474,305	5,013,715
1994	753,415	552,894	507,049	783,080	645,994	5,124,233	688,178	486,139	4,957,272
1995	759,268	557,171	511,056	788,954	852,432	5,157,180	693,514	489,981	4,987,917
1996	762,709	559,664	513,504	792,436	856,286	5,177,447	696,787	492,273	5,006,377
1997	765,205	561,174	515,567	794,217	858,548	5,187,499	699,078	493,933	5,013,790
1998	765,457	561,319	515,787	794,373	858,761	5,188,207	699,286	494,085	5,014,225
1999	765,337	561,253	515,680	794,304	858,663	5,187,742	699,174	494,003	5,013,947
2000	766,453	561,867	516,675	794,946	859,571	5,191,543	700,196	494,749	5,016,158
2001	766,485	561,885	516,703	794,964	859,596	5,191,701	700,231	494,776	5,016,258
2002	766,720	562,016	516,914	795,100	859,789	5,192,475	700,445	494,931	5,016,703
2003	767,018	562,179	517,180	795,271	860,031	5,193,531	700,727	495,139	5,017,320
2004	767,633	562,519	517,728	795,625	860,532	5,195,613	701,288	495,550	5,018,531
2005	769,364	563,473	519,274	796,621	861,942	5,201,456	702,678	496,713	5,021,917
2006	769,290	563,432	519,208	796,579	861,881	5,201,290	702,819	496,670	5,021,834
2007	769,435	563,512	519,338	796,662	862,001	5,201,708	702,946	496,761	5,022,066
2008	769,618	563,612	519,500	796,767	862,149	5,202,377	703,119	496,889	5,022,460
2009	769,846	563,738	519,704	796,899	862,336	5,203,204	703,335	497,047	5,022,948
2010	770,189	563,927	520,010	797,096	862,615	5,204,323	703,644	497,274	5,023,591
2011	770,245	563,958	520,062	797,128	862,661	5,204,547	703,701	497,315	5,023,726
2012	770,381	564,033	520,181	797,207	862,772	5,204,985	703,821	497,403	5,023,978
2013	771,564	564,685	521,236	797,887	863,734	5,209,095	704,923	498,208	5,026,376
2014	772,042	564,949	521,665	798,163	864,124	5,210,604	705,347	498,519	5,027,239
2015	772,029	564,942	521,653	798,156	864,113	5,210,536	705,332	498,508	5,027,197
2016	772,020	564,937	521,644	798,149	864,106	5,210,497	705,327	498,504	5,027,171
2017	772,945	565,447	522,470	798,683	864,860	5,213,722	706,179	499,128	5,029,057
2018	772,874	565,406	522,407	798,642	864,801	5,213,483	706,115	499,080	5,028,919
2019	772,886	565,414	522,419	798,649	864,812	5,213,543	706,128	499,089	5,028,955
2020	772,470	565,185	522,047	798,408	864,472	5,212,111	705,746	498,811	5,028,121
2021	772,449	565,173	522,028	798,397	864,456	5,212,127	705,726	498,795	5,028,145
2022	772,367	565,128	521,955	798,350	864,389	5,211,953	705,652	498,742	5,028,062
2023	772,395	565,143	521,979	798,365	864,411	5,212,053	705,666	498,751	5,028,125
2024	772,309	565,097	521,903	798,317	864,342	5,211,735	705,573	498,686	5,027,941
2025	772,315	565,098	521,907	798,319	864,346	5,211,909	705,584	498,693	5,028,065
2026	772,316	565,099	521,909	798,320	864,347	5,211,926	705,586	498,695	5,028,075
2027	772,295	565,088	521,890	798,309	864,331	5,211,817	705,563	498,678	5,028,010
2028	772,330	565,107	521,922	798,329	864,360	5,211,975	705,600	498,703	5,028,104
2029	772,294	565,087	521,889	798,307	864,329	5,211,829	705,564	498,678	5,028,018
2030	772,337	565,111	521,929	798,334	864,364	5,212,008	705,608	498,708	5,028,124
2031	772,324	565,103	521,917	798,325	864,354	5,211,937	705,592	498,699	5,028,081
2032	772,298	565,090	521,894	798,310	864,334	5,211,833	705,567	498,680	5,028,020
2033	772,340	565,113	521,931	798,335	864,367	5,212,052	705,614	498,714	5,028,156
2034	772,304	565,092	521,898	798,313	864,338	5,211,882	705,575	498,687	5,028,053
2035	772,182	565,026	521,789	798,243	864,238	5,211,443	705,467	498,607	5,027,790
TOTAL	40,882,441	28,736,858	26,253,676	40,468,227	43,315,666	277,010,433	36,245,209	25,676,123	267,657,353

TABLE B-11

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed Through  
Minimum OMP&R Component of Transportation Charge (Continued)**

(in dollars)

Sheet 5 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)									
	SOUTH SAN JOAQUIN		TEHACHAPI DIVISION			MOJAVE DIVISION				
	DIVISION	(continued)								
	Reach 16A	Subtotal	Reach 17E	Reach 17F	Subtotal	Reach 18A	Reach 19	Reach 19C	Reach 20A	
	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]	
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	385,659	0	0	0	0	0	0	0	0
1970	0	885,234	0	0	0	0	0	0	0	0
1971	10,291	2,400,543	3,471	0	3,471	0	0	0	0	0
1972	1,106,884	3,734,703	1,424,782	28,127	1,452,909	36,699	135,675	0	130,711	130,711
1973	1,243,941	4,142,935	1,777,260	49,949	1,827,209	36,207	146,739	0	161,838	161,838
1974	1,343,972	4,369,772	2,298,091	16,259	2,314,350	30,525	90,404	0	115,571	115,571
1975	1,537,862	5,090,233	2,403,430	35,193	2,438,623	40,588	122,584	0	137,684	137,684
1976	1,727,428	5,001,677	2,776,194	126,653	2,902,847	118,610	201,215	0	182,927	182,927
1977	1,961,081	6,065,390	3,845,464	83,936	3,929,400	93,565	226,906	0	180,884	180,884
1978	1,922,556	5,738,596	2,954,313	42,637	2,996,950	91,815	200,759	0	215,673	215,673
1979	1,798,566	5,960,033	3,539,402	45,997	3,585,399	99,670	307,386	0	261,205	261,205
1980	2,231,541	7,463,612	4,749,456	54,806	4,804,262	116,487	446,175	0	290,719	290,719
1981	2,739,842	7,607,753	5,469,468	64,348	5,533,816	313,970	574,208	0	316,921	316,921
1982	2,992,032	8,569,629	6,403,866	56,774	6,460,640	451,289	644,750	0	279,511	279,511
1983	4,319,194	11,365,106	14,167,616	97,375	14,264,991	346,333	568,366	0	371,721	371,721
1984	5,002,584	13,903,223	18,021,940	77,114	18,099,054	267,114	563,910	0	412,194	412,194
1985	5,878,564	15,638,174	18,668,907	137,883	18,806,790	298,696	473,941	0	449,612	449,612
1986	5,698,032	16,554,629	18,830,683	109,906	18,940,589	701,938	350,137	0	347,125	347,125
1987	5,697,966	17,601,367	17,536,789	98,184	17,634,953	1,254,571	565,632	0	815,734	815,734
1988	5,235,234	15,978,867	17,559,418	137,003	17,696,421	1,241,103	570,258	0	595,227	595,227
1989	5,410,261	16,311,755	17,758,312	93,580	17,851,892	1,088,519	302,389	0	388,034	388,034
1990	6,124,599	18,425,300	18,828,247	97,852	18,926,099	1,253,581	153,192	0	380,797	380,797
1991	6,857,283	21,690,241	19,393,880	219,340	19,613,220	1,840,315	919,137	0	1,005,392	1,005,392
1992	7,661,686	23,678,170	20,726,107	424,711	21,150,818	1,865,411	1,013,178	0	1,204,540	1,204,540
1993	7,918,864	24,693,463	21,256,275	433,859	21,690,134	1,848,523	945,411	0	1,205,475	1,205,475
1994	7,287,812	23,851,601	20,729,877	281,640	21,011,517	1,892,771	953,708	0	1,158,049	1,158,049
1995	7,329,705	24,007,073	20,803,054	283,699	21,086,753	1,907,299	964,817	0	1,169,120	1,169,120
1996	7,355,594	24,101,453	20,847,705	285,017	21,132,722	1,916,357	973,169	0	1,176,834	1,176,834
1997	7,369,569	24,152,206	20,867,021	285,669	21,152,690	1,920,971	987,305	0	1,186,454	1,186,454
1998	7,370,557	24,156,181	20,868,183	285,711	21,153,894	1,921,273	988,563	0	1,187,279	1,187,279
1999	7,369,880	24,153,875	20,867,367	285,683	21,153,050	1,921,053	987,544	0	1,186,623	1,186,623
2000	7,375,458	24,173,679	20,873,752	285,916	21,159,668	1,922,798	995,945	0	1,192,020	1,192,020
2001	7,375,695	24,174,418	20,874,044	285,928	21,159,972	1,922,880	996,323	0	1,192,264	1,192,264
2002	7,378,831	24,178,507	20,875,320	285,978	21,161,298	1,923,230	998,044	0	1,193,369	1,193,369
2003	7,378,392	24,183,953	20,877,106	286,042	21,163,148	1,923,721	1,000,465	0	1,194,923	1,194,923
2004	7,381,446	24,194,823	20,880,598	286,170	21,166,768	1,924,677	1,005,028	0	1,197,854	1,197,854
2005	7,390,032	24,225,396	20,890,360	286,532	21,176,892	1,927,350	1,017,994	0	1,206,185	1,206,185
2006	7,389,796	24,224,383	20,890,123	286,523	21,176,646	1,927,285	1,017,652	0	1,205,965	1,205,965
2007	7,390,405	24,226,702	20,890,790	286,547	21,177,337	1,927,468	1,018,557	0	1,206,547	1,206,547
2008	7,391,394	24,230,109	20,891,931	286,591	21,178,522	1,927,781	1,020,059	0	1,207,512	1,207,512
2009	7,392,615	24,234,341	20,893,341	286,642	21,179,983	1,928,166	1,021,906	0	1,208,699	1,208,699
2010	7,394,249	24,240,251	20,895,193	286,711	21,181,904	1,928,676	1,024,382	0	1,210,289	1,210,289
2011	7,394,582	24,241,368	20,895,585	286,726	21,182,311	1,928,781	1,024,904	0	1,210,626	1,210,626
2012	7,395,226	24,243,694	20,896,309	286,753	21,183,062	1,928,982	1,025,860	0	1,211,241	1,211,241
2013	7,401,284	24,265,000	20,903,231	287,008	21,190,239	1,930,879	1,035,053	0	1,217,144	1,217,144
2014	7,403,483	24,273,078	20,905,707	287,102	21,192,809	1,931,557	1,038,333	0	1,219,253	1,219,253
2015	7,403,377	24,272,757	20,905,583	287,097	21,192,680	1,931,524	1,038,194	0	1,219,163	1,219,163
2016	7,403,344	24,272,596	20,905,497	287,097	21,192,594	1,931,506	1,038,182	0	1,219,155	1,219,155
2017	7,408,030	24,289,219	20,910,966	287,291	21,198,257	1,932,987	1,045,122	0	1,223,614	1,223,614
2018	7,407,687	24,287,975	20,910,569	287,277	21,197,846	1,932,880	1,044,612	0	1,223,289	1,223,289
2019	7,407,773	24,288,253	20,910,676	287,281	21,197,957	1,932,905	1,044,730	0	1,223,362	1,223,362
2020	7,405,689	24,280,835	20,908,255	287,195	21,195,450	1,932,252	1,041,658	0	1,221,388	1,221,388
2021	7,405,662	24,280,692	20,908,363	287,188	21,195,551	1,932,262	1,041,463	0	1,221,264	1,221,264
2022	7,405,363	24,279,533	20,908,152	287,171	21,195,323	1,932,189	1,040,888	0	1,220,896	1,220,896
2023	7,405,444	24,279,959	20,908,360	287,170	21,195,530	1,932,231	1,040,871	0	1,220,884	1,220,884
2024	7,404,922	24,278,286	20,907,849	287,143	21,194,992	1,932,076	1,039,924	0	1,220,274	1,220,274
2025	7,405,130	24,278,836	20,908,247	287,148	21,195,395	1,932,164	1,040,114	0	1,220,396	1,220,396
2026	7,405,152	24,278,897	20,908,279	287,149	21,195,428	1,932,172	1,040,151	0	1,220,419	1,220,419
2027	7,404,995	24,278,409	20,908,083	287,142	21,195,225	1,932,122	1,039,906	0	1,220,263	1,220,263
2028	7,405,225	24,279,157	20,908,364	287,152	21,195,516	1,932,197	1,040,248	0	1,220,484	1,220,484
2029	7,405,013	24,278,438	20,908,107	287,142	21,195,249	1,932,128	1,039,934	0	1,220,280	1,220,280
2030	7,405,273	24,279,314	20,908,420	287,153	21,195,573	1,932,210	1,040,319	0	1,220,529	1,220,529
2031	7,405,168	24,278,989	20,908,292	287,149	21,195,441	1,932,176	1,040,167	0	1,220,432	1,220,432
2032	7,405,019	24,278,485	20,908,113	287,142	21,195,255	1,932,129	1,039,944	0	1,220,287	1,220,287
2033	7,405,343	24,279,488	20,908,514	287,158	21,195,672	1,932,234	1,040,398	0	1,220,580	1,220,580
2034	7,405,092	24,278,684	20,908,209	287,148	21,195,357	1,932,151	1,040,011	0	1,220,331	1,220,331
2035	7,404,459	24,276,459	20,907,442	287,119	21,194,561	1,931,950	1,039,137	0	1,219,770	1,219,770
TOTAL	396,847,822	1,280,863,416	1,117,784,308	14,566,566	1,132,350,874	94,395,929	52,463,936	0	60,224,805	60,224,805

TABLE B-11

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed Through  
Minimum OMP&R Component of Transportation Charge (Continued)**

(in dollars)

Sheet 6 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)								SANTA ANA DIVISION	
	MOJAVE DIVISION (continued)									
	Reach 20B	Reach 21	Reach 22A	Reach 22B	Reach 23	Reach 24	Subtotal	Reach 25	Reach 26A	
	[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	
1961	0	0	0	0	0	0	0	0	0	
1962	0	0	0	0	0	0	0	0	0	
1963	0	0	0	0	0	0	0	0	0	
1964	0	0	0	0	0	0	0	0	0	
1965	0	0	0	0	0	0	0	0	0	
1966	0	0	0	0	0	0	0	0	0	
1967	0	0	0	0	0	0	0	0	0	
1968	0	0	0	0	0	0	0	0	0	
1969	0	0	0	0	0	0	0	0	0	
1970	0	0	0	0	0	0	0	0	0	
1971	0	0	0	0	0	0	0	0	0	
1972	120,271	75,768	80,436	1,036,831	51,520	362,153	2,030,064	26	578	
1973	148,631	60,641	66,539	1,283,816	65,475	353,262	2,323,148	20,541	679,328	
1974	88,200	65,007	77,667	1,477,946	96,340	334,302	2,375,962	24,380	799,400	
1975	118,898	135,462	77,825	1,630,554	111,141	419,450	2,794,186	29,337	885,021	
1976	151,555	106,314	131,007	1,598,071	107,787	304,638	2,902,124	51,356	1,103,139	
1977	112,589	98,757	86,279	1,882,080	71,228	48,359	2,800,647	62,584	1,412,740	
1978	120,584	109,271	71,763	2,211,965	72,179	637,401	3,731,410	67,186	1,159,950	
1979	194,104	203,078	121,586	2,104,832	76,960	202,566	3,571,387	84,462	1,235,189	
1980	237,250	156,794	117,274	2,670,471	147,009	688,605	4,870,784	72,651	1,532,581	
1981	283,681	176,183	115,878	2,996,836	134,904	108,952	5,021,533	35,665	1,571,045	
1982	334,825	188,582	127,071	3,288,530	302,522	630,940	6,248,020	27,198	1,842,101	
1983	329,833	222,020	141,862	3,922,312	223,167	392,900	6,518,514	19,170	1,677,709	
1984	328,559	266,103	146,268	4,745,777	59,337	1,090,193	7,879,455	11,319	2,322,388	
1985	387,433	798,995	125,458	5,408,838	261,135	810,478	9,014,586	17,764	2,703,002	
1986	314,967	241,805	178,586	6,164,995	154,339	514,550	8,968,442	31,012	2,768,654	
1987	355,264	296,493	234,974	5,499,022	150,089	729,233	9,891,012	19,362	2,838,942	
1988	400,282	324,350	152,668	6,889,238	215,978	817,716	11,206,820	36,158	2,982,797	
1989	324,762	200,851	128,602	5,940,489	261,802	1,226,514	9,861,962	31,897	3,085,492	
1990	140,941	209,374	47,123	6,231,355	343,128	1,342,176	10,101,667	25,717	3,133,357	
1991	550,726	505,373	412,119	6,184,671	584,436	1,247,340	13,249,509	77,117	3,953,154	
1992	716,037	566,955	516,936	8,312,813	788,887	2,901,707	17,886,464	190,213	5,875,380	
1993	774,009	565,601	519,566	9,117,587	783,089	1,484,217	17,243,478	235,918	6,183,674	
1994	761,510	558,603	508,957	9,008,509	716,324	2,107,258	17,665,689	83,314	6,189,283	
1995	769,701	564,215	513,881	9,071,855	608,980	1,897,104	17,466,972	56,729	6,226,205	
1996	775,733	568,125	517,229	9,113,867	566,161	1,742,731	17,350,206	56,967	6,248,266	
1997	784,961	573,466	521,490	9,156,051	568,824	131,662	15,831,184	57,022	6,256,079	
1998	785,775	573,932	521,858	9,159,503	569,031	4,737,037	20,444,251	57,024	6,256,493	
1999	785,119	573,560	521,567	9,156,725	568,847	(1,217,622)	14,483,416	57,024	6,256,247	
2000	790,516	576,611	523,963	9,179,158	570,284	3,001,471	18,752,766	57,024	6,258,163	
2001	790,760	576,748	524,070	9,180,172	570,350	3,331,720	19,085,287	57,024	6,258,251	
2002	791,865	577,372	524,560	9,184,724	570,637	1,529,465	17,293,266	57,024	6,258,634	
2003	793,419	578,251	525,248	9,191,129	571,039	252,084	16,030,279	57,024	6,259,170	
2004	796,350	579,910	526,549	9,203,333	571,825	2,492,456	18,297,982	57,024	6,260,217	
2005	804,681	584,618	530,243	9,237,846	574,022	2,644,528	18,527,467	57,024	6,263,147	
2006	804,461	584,494	530,146	9,236,953	573,969	2,674,076	18,555,001	57,024	6,263,075	
2007	805,043	584,821	530,403	9,239,346	574,119	2,219,600	18,105,904	57,024	6,263,276	
2008	806,008	585,369	530,832	9,243,360	574,376	1,606,942	17,502,239	57,024	6,263,618	
2009	807,195	586,036	531,358	9,248,294	574,693	2,137,618	18,043,965	57,024	6,264,041	
2010	808,785	586,936	532,064	9,254,875	575,110	2,509,379	18,430,496	57,024	6,264,596	
2011	809,122	587,125	532,213	9,256,267	575,198	2,944,353	18,868,589	57,024	6,264,714	
2012	809,737	587,472	532,486	9,258,815	575,361	2,382,485	18,312,439	57,024	6,264,932	
2013	815,640	590,812	535,103	9,283,275	576,919	253,561	16,238,386	57,024	6,267,008	
2014	817,749	592,003	536,038	9,292,021	577,476	3,262,161	19,266,591	57,024	6,267,751	
2015	817,659	591,953	536,001	9,291,631	577,448	2,849,524	18,853,097	57,024	6,267,714	
2016	817,651	591,947	535,994	9,291,664	577,429	329,755	16,333,283	57,024	6,267,688	
2017	822,110	594,469	537,972	9,310,149	578,660	1,841,167	17,886,240	57,024	6,269,329	
2018	821,785	594,282	537,828	9,308,803	578,570	2,027,548	18,069,597	57,024	6,269,210	
2019	821,858	594,326	537,861	9,309,124	578,595	2,063,082	18,105,843	57,024	6,269,242	
2020	819,884	593,209	536,986	9,300,934	578,050	2,136,030	18,160,391	57,024	6,268,516	
2021	819,760	593,139	536,931	9,300,662	578,074	2,879,758	18,903,313	57,024	6,268,548	
2022	819,392	592,931	536,766	9,299,354	578,027	1,473,193	17,493,636	57,024	6,268,485	
2023	819,380	592,922	536,761	9,299,508	578,073	2,355,014	18,375,644	57,024	6,268,547	
2024	818,770	592,578	536,491	9,297,203	577,959	2,981,944	18,997,219	57,024	6,268,394	
2025	818,892	592,647	536,546	9,297,935	578,048	1,682,904	17,699,646	57,024	6,268,513	
2026	818,915	592,662	536,556	9,298,035	578,056	2,197,665	18,214,631	57,024	6,268,523	
2027	818,759	592,574	536,486	9,297,385	578,011	2,307,496	18,323,002	57,024	6,268,464	
2028	818,980	592,696	536,585	9,298,307	578,074	2,327,176	18,344,747	57,024	6,268,548	
2029	818,776	592,583	536,494	9,297,458	578,017	1,913,059	17,928,729	57,024	6,268,471	
2030	819,025	592,723	536,605	9,298,493	578,087	2,302,642	18,320,633	57,024	6,268,564	
2031	818,928	592,670	536,562	9,298,083	578,059	2,383,277	18,400,354	57,024	6,268,527	
2032	818,783	592,587	536,497	9,297,480	578,018	1,934,774	17,950,499	57,024	6,268,472	
2033	819,076	592,753	536,627	9,298,733	578,108	1,865,288	17,883,797	57,024	6,268,593	
2034	818,827	592,612	536,515	9,297,702	578,040	2,565,200	18,581,389	57,024	6,268,502	
2035	818,266	592,294	536,268	9,295,298	577,867	5,048,625	21,059,475	57,024	6,268,272	
TOTAL	40,453,007	30,194,813	25,999,077	479,039,048	29,405,267	106,752,832	918,928,714	3,591,977	312,757,909	

TABLE B-11

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed Through  
Minimum OMP&R Component of Transportation Charge (Continued)**

(in dollars)

Sheet 7 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)									
	SANTA ANA DIVISION (continued)					WEST BRANCH				
	Reach 28G	Reach 28H	Reach 28J	Subtotal		Reach 29A	Reach 29F	Reach 29G	Reach 29H	Reach 29J
	[56]	[57]	[58]	[59]		[60]	[61]	[62]	[63]	[64]
1961	0	0	0	0		0	0	0	0	0
1962	0	0	0	0		0	0	0	0	0
1963	0	0	0	0		0	0	0	0	0
1964	0	0	0	0		0	0	0	0	0
1965	0	0	0	0		0	0	0	0	0
1966	0	0	0	0		0	0	0	0	0
1967	0	0	0	0		0	0	0	0	0
1968	0	0	0	0		0	0	0	0	0
1969	0	0	0	0		0	0	0	0	0
1970	0	0	0	0		0	0	0	0	0
1971	0	0	0	0		0	0	0	0	0
1972	109	30	0	743		719,255	159,249	199,145	234,196	88,198
1973	136,352	79	0	836,300		779,949	339,363	122,664	264,850	119,743
1974	155,262	34,693	854,637	1,868,372		883,312	158,366	112,458	350,160	(4,525)
1975	110,729	69,082	723,814	1,817,983		1,049,990	176,676	194,724	801,457	75,870
1976	138,575	100,400	635,853	2,029,323		1,220,429	215,588	202,591	624,614	98,268
1977	127,543	92,647	825,880	2,521,394		1,268,813	116,939	218,129	684,679	184
1978	166,919	68,363	835,082	2,297,500		1,174,708	342,479	267,308	415,641	17,764
1979	142,586	92,812	265,525	1,820,574		1,366,942	285,575	284,188	972,584	29,850
1980	158,340	129,897	1,120,131	3,013,600		1,698,257	224,472	455,619	874,259	288,303
1981	160,064	111,730	335,076	2,213,580		1,780,489	124,913	615,148	2,151,972	8,808
1982	207,789	137,018	1,500,705	3,714,811		1,943,563	193,486	713,829	2,250,832	416,726
1983	246,942	125,746	416,615	2,486,182		2,754,981	150,951	887,599	749,429	581,779
1984	240,497	190,925	759,011	3,524,140		3,430,389	82,611	2,345,323	500,793	711,257
1985	451,600	182,242	866,031	4,220,639		3,921,496	296,553	3,034,765	998,976	612,349
1986	439,048	256,526	985,311	4,480,551		3,757,115	457,816	2,877,119	1,480,353	1,015,619
1987	278,094	218,717	1,116,782	4,471,897		3,718,736	211,589	2,952,662	958,910	483,641
1988	272,394	202,092	1,186,573	4,680,014		3,441,310	264,930	3,013,932	885,377	459,483
1989	244,325	265,041	1,275,595	4,902,350		3,944,534	420,661	2,821,380	1,472,765	873,256
1990	387,291	273,595	1,485,875	5,305,835		3,802,466	485,484	3,122,358	2,089,514	762,803
1991	326,173	389,573	1,770,832	6,516,849		4,621,942	738,961	2,226,137	2,301,800	642,978
1992	461,680	460,599	14,922	7,002,794		5,018,864	919,557	2,793,388	3,428,095	679,535
1993	533,602	525,239	2,851,833	10,330,266		5,056,008	920,798	2,860,694	2,868,197	682,512
1994	473,217	477,835	2,054,203	9,277,852		5,054,421	755,789	2,541,578	3,415,429	630,763
1995	476,578	481,227	2,258,923	9,499,662		5,083,843	765,039	2,544,100	3,052,314	632,530
1996	478,492	483,160	2,021,869	9,288,754		5,101,534	772,918	2,554,214	3,081,607	633,512
1997	478,960	483,630	2,378,904	9,654,595		5,108,024	788,013	2,560,461	3,133,841	633,763
1998	478,974	483,645	2,423,954	9,700,090		5,108,393	789,403	2,560,885	3,138,117	633,772
1999	478,974	483,645	2,357,533	9,633,423		5,108,169	788,285	2,560,548	3,134,390	633,772
2000	478,974	483,645	2,380,664	9,658,470		5,109,948	797,418	2,563,234	3,165,514	633,772
2001	478,974	483,645	2,492,979	9,770,873		5,110,032	797,807	2,563,359	3,166,980	633,772
2002	478,974	483,645	2,436,567	9,714,844		5,110,388	799,671	2,563,897	3,173,308	633,772
2003	478,974	483,645	2,383,388	9,662,201		5,110,985	802,228	2,564,649	3,182,113	633,772
2004	478,974	483,645	2,540,430	9,820,290		5,111,863	807,225	2,566,123	3,199,262	633,772
2005	478,974	483,645	2,467,618	9,750,408		5,114,587	821,280	2,570,240	3,247,287	633,772
2006	478,974	483,645	2,585,583	9,868,301		5,114,522	820,898	2,570,140	3,246,081	633,772
2007	478,974	483,645	2,569,358	9,852,277		5,114,709	821,896	2,570,419	3,249,292	633,772
2008	478,974	483,645	2,551,763	9,835,024		5,115,026	823,515	2,570,904	3,254,983	633,772
2009	478,974	483,645	2,561,281	9,844,965		5,115,418	825,521	2,571,495	3,261,776	633,772
2010	478,974	483,645	2,575,174	9,859,413		5,115,939	828,195	2,572,277	3,271,044	633,772
2011	478,974	483,645	2,578,848	9,863,205		5,116,046	828,743	2,572,445	3,273,061	633,772
2012	478,974	483,645	2,585,625	9,870,200		5,116,250	829,791	2,572,749	3,276,611	633,772
2013	478,974	483,645	2,609,557	9,896,208		5,118,181	839,731	2,575,669	3,310,635	633,772
2014	478,974	483,645	2,676,727	9,964,121		5,118,875	843,313	2,576,715	3,322,878	633,772
2015	478,974	483,645	2,648,151	9,935,508		5,118,841	843,138	2,576,659	3,322,146	633,772
2016	478,974	483,645	2,648,630	9,935,961		5,118,823	843,120	2,576,631	3,322,196	633,772
2017	478,974	483,645	2,685,276	9,974,248		5,120,332	850,649	2,578,918	3,347,830	633,772
2018	478,974	483,645	2,681,682	9,970,535		5,120,223	850,098	2,578,750	3,345,926	633,772
2019	478,974	483,645	2,682,490	9,971,375		5,120,249	850,241	2,578,797	3,346,484	633,772
2020	478,974	483,645	2,550,725	9,838,884		5,119,584	846,894	2,577,781	3,334,937	633,772
2021	478,974	483,645	2,694,144	9,982,335		5,119,593	846,697	2,577,808	3,334,298	633,772
2022	478,974	483,645	2,633,554	9,921,682		5,119,517	846,070	2,577,704	3,332,150	633,772
2023	478,974	483,645	2,778,110	10,066,300		5,119,558	846,040	2,577,777	3,332,111	633,772
2024	478,974	483,645	2,860,005	9,948,042		5,119,401	845,043	2,577,550	3,328,798	633,772
2025	478,974	483,645	2,635,641	9,923,797		5,119,491	845,229	2,577,699	3,329,427	633,772
2026	478,974	483,645	2,632,112	9,920,278		5,119,499	845,271	2,577,712	3,329,562	633,772
2027	478,974	483,645	2,659,323	9,947,430		5,119,447	845,016	2,577,631	3,328,715	633,772
2028	478,974	483,645	2,718,056	10,006,247		5,119,523	845,383	2,577,746	3,329,954	633,772
2029	478,974	483,645	2,660,490	9,948,604		5,119,454	845,044	2,577,641	3,328,816	633,772
2030	478,974	483,645	2,662,206	9,950,413		5,118,538	845,459	2,577,769	3,330,216	633,772
2031	478,974	483,645	2,661,763	9,949,933		5,119,502	845,290	2,577,718	3,329,579	633,772
2032	478,974	483,645	2,575,242	9,863,357		5,119,455	845,054	2,577,642	3,328,841	633,772
2033	478,974	483,645	2,747,299	10,035,535		5,119,562	845,578	2,577,808	3,330,613	633,772
2034	478,974	483,645	2,659,631	9,947,776		5,119,479	845,173	2,577,682	3,329,251	633,772
2035	478,974	483,645	2,602,118	9,890,033		5,119,274	844,229	2,577,370	3,326,242	633,772
TOTAL	26,494,173	24,231,408	127,193,679	493,269,146		272,140,946	41,998,410	140,320,054	164,884,068	35,258,305

TABLE B-11

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed Through  
Minimum OMP&R Component of Transportation Charge (Continued)**

(in dollars)

Sheet 8 of 8

Calendar Year	CALIFORNIA AQUEDUCT (continued)								GRAND TOTAL
	WEST BRANCH (contd.)		COASTAL BRANCH					Total	
	Reach 30	Subtotal	Reach 31A (a)	Reach 33A	Reach 34	Reach 35	Subtotal		
	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	42,918
1963	0	0	0	0	0	0	0	0	168,358
1964	0	0	0	0	0	0	0	0	184,729
1965	0	0	0	0	0	0	0	0	378,874
1966	0	0	0	0	0	0	0	0	408,397
1967	0	0	0	0	0	0	0	0	634,505
1968	0	0	0	0	0	0	0	2,160,548	2,745,160
1969	0	0	509,728	0	0	0	509,728	3,324,718	4,074,939
1970	0	0	609,988	0	0	0	609,988	3,983,062	4,676,282
1971	0	0	699,052	0	0	0	699,052	5,614,013	6,185,714
1972	420,789	1,820,832	697,576	0	0	0	697,576	12,353,356	12,998,869
1973	621,431	2,248,000	641,626	0	0	0	641,626	14,590,688	15,194,233
1974	723,949	2,223,720	669,279	0	0	0	669,279	16,598,762	17,372,561
1975	841,991	3,140,708	806,429	0	0	0	806,429	19,569,999	20,517,423
1976	(650,944)	1,710,546	840,927	0	0	0	840,927	19,002,859	20,027,213
1977	634,581	2,923,325	872,169	0	0	0	872,169	23,272,236	24,217,840
1978	3,088,954	5,306,854	934,119	0	0	0	934,119	24,818,739	26,012,786
1979	958,068	3,897,207	871,688	0	0	0	871,688	23,421,881	24,675,598
1980	222,549	3,763,459	1,047,440	0	0	0	1,047,440	30,101,380	32,034,460
1981	1,077,627	5,758,957	1,025,054	0	0	0	1,025,054	33,634,246	35,260,671
1982	992,086	6,510,522	1,027,865	0	0	0	1,027,865	39,932,903	42,103,234
1983	3,134,770	8,259,509	1,154,604	0	0	0	1,154,604	54,208,379	56,549,912
1984	727,534	7,797,907	1,423,478	0	0	0	1,423,478	63,495,471	66,648,672
1985	(838,356)	8,025,783	1,864,272	0	0	0	1,864,272	69,829,310	73,456,817
1986	1,335,265	10,923,287	1,713,732	0	0	0	1,713,732	73,433,680	76,790,100
1987	1,401,144	9,726,682	1,712,884	0	0	0	1,712,884	73,252,376	77,049,054
1988	1,434,794	9,499,826	1,950,191	0	0	0	1,950,191	72,984,226	76,682,002
1989	1,366,053	10,898,649	1,801,847	0	0	0	1,801,847	73,711,819	78,505,200
1990	739,532	11,002,157	2,164,558	0	0	0	2,164,558	81,006,494	86,082,253
1991	1,180,591	11,712,409	3,220,937	0	0	0	3,220,937	91,819,904	97,970,080
1992	3,761,798	16,601,237	3,758,521	0	0	0	3,758,521	107,789,873	114,894,673
1993	(550,929)	11,837,278	3,501,712	0	0	0	3,501,712	107,219,133	114,290,632
1994	2,740,801	15,138,781	3,231,222	0	0	0	3,231,222	107,671,448	114,409,413
1995	4,257,340	16,335,166	3,254,674	0	0	0	3,254,674	109,271,633	116,036,069
1996	1,393,465	13,537,250	3,268,820	2,738,997	644,184	334,120	6,986,121	110,108,150	116,902,133
1997	6,289,583	18,513,685	3,274,723	2,676,220	635,813	321,497	6,908,253	113,969,839	120,774,795
1998	2,205,704	14,436,274	3,275,095	2,673,783	635,852	321,557	6,906,287	114,557,841	121,362,563
1999	2,608,413	14,833,577	3,274,864	2,673,667	635,834	321,516	6,905,881	108,922,111	115,726,394
2000	2,331,906	14,601,792	3,276,719	2,674,580	635,966	321,863	6,909,128	113,031,357	119,839,148
2001	2,543,348	14,815,298	3,276,798	2,674,621	635,971	321,880	6,909,270	113,691,551	120,499,500
2002	2,121,803	14,402,839	3,277,172	2,674,804	635,998	321,949	6,909,923	111,440,597	118,249,250
2003	2,474,875	14,768,522	3,277,688	2,675,059	636,035	322,045	6,910,827	110,503,416	117,313,044
2004	2,552,631	14,870,876	3,278,704	2,675,560	636,107	322,236	6,912,607	113,057,160	119,868,711
2005	2,646,775	15,033,941	3,281,545	2,676,959	636,308	322,771	6,917,583	113,451,610	120,268,531
2006	2,859,767	15,245,180	3,281,468	2,676,924	636,302	322,758	6,917,452	113,805,927	120,622,706
2007	2,052,154	14,442,242	3,281,669	2,677,021	636,317	322,795	6,917,802	112,543,295	119,360,451
2008	2,654,315	15,052,515	3,281,997	2,677,184	636,340	322,856	6,918,377	112,540,666	119,358,446
2009	2,428,767	14,836,749	3,282,402	2,677,384	636,368	322,932	6,919,086	112,886,511	119,705,055
2010	2,383,186	14,804,413	3,282,944	2,677,850	636,407	323,034	6,920,035	113,269,047	120,088,619
2011	2,545,149	14,969,216	3,283,054	2,677,704	636,414	323,054	6,920,226	113,878,376	120,698,159
2012	2,459,075	14,888,248	3,283,268	2,677,809	636,429	323,094	6,920,600	113,253,716	120,073,900
2013	2,455,782	14,933,770	3,285,270	2,678,799	636,571	323,473	6,924,113	111,301,175	118,125,146
2014	2,531,838	15,027,391	3,286,003	2,679,157	636,623	323,609	6,925,392	114,509,942	121,335,297
2015	2,642,643	15,137,199	3,285,969	2,679,137	636,621	323,604	6,925,331	114,176,886	121,002,176
2016	2,543,868	15,038,410	3,285,946	2,679,126	636,619	323,599	6,925,290	111,558,233	118,383,479
2017	2,760,867	15,292,368	3,287,525	2,679,909	636,731	323,898	6,928,063	113,442,726	120,270,966
2018	2,493,059	15,021,828	3,287,411	2,679,853	636,723	323,873	6,927,860	113,348,903	120,176,926
2019	2,508,154	15,037,697	3,287,439	2,679,865	636,725	323,878	6,927,907	113,402,512	120,230,592
2020	2,565,055	15,078,023	3,286,737	2,679,521	636,676	323,748	6,926,682	113,347,385	120,174,138
2021	2,623,172	15,135,340	3,286,758	2,679,533	636,677	323,752	6,926,720	114,290,999	121,117,799
2022	2,593,889	15,103,102	3,286,684	2,679,502	636,671	323,738	6,926,595	112,785,909	119,612,577
2023	2,658,010	15,167,268	3,286,741	2,679,530	636,675	323,749	6,926,695	113,877,972	120,704,756
2024	2,231,932	14,736,496	3,286,594	2,679,457	636,666	323,722	6,926,439	113,946,797	120,773,305
2025	2,945,664	15,451,282	3,286,690	2,679,512	636,673	323,740	6,926,615	113,341,305	120,168,007
2026	2,609,321	15,115,137	3,286,699	2,679,516	636,673	323,741	6,926,629	113,516,776	120,343,493
2027	2,315,533	14,820,114	3,286,644	2,679,489	636,668	323,733	6,926,534	113,356,110	120,182,725
2028	2,848,097	15,354,475	3,286,723	2,679,529	636,675	323,746	6,926,673	113,972,819	120,799,582
2029	2,277,471	14,782,198	3,286,651	2,679,493	636,669	323,733	6,926,546	112,925,161	119,751,787
2030	2,848,079	15,354,833	3,286,737	2,679,539	636,675	323,749	6,926,700	113,893,593	120,720,385
2031	2,575,066	15,080,927	3,286,704	2,679,520	636,674	323,743	6,926,641	113,698,164	120,524,891
2032	2,443,261	14,948,025	3,286,653	2,679,494	636,669	323,733	6,926,549	113,027,630	119,854,261
2033	2,671,603	15,178,936	3,286,760	2,679,549	636,677	323,753	6,926,739	113,366,396	120,193,235
2034	2,495,236	15,000,593	3,286,678	2,679,507	636,671	323,737	6,926,593	113,795,994	120,622,674
2035	(5,662,143)	6,838,744	3,286,460	2,679,400	636,656	323,695	6,926,211	108,049,072	114,875,326
TOTAL	125,147,791	779,749,574	173,336,978	107,183,863	25,466,003	12,937,703	318,924,547	5,875,916,765	6,229,934,569

a) Includes certain costs to be assigned directly to Kern County Water Agency. Refer to Appendix B text discussion of Table B-16A under "Project Water Charges."

TABLE B-12  
Variable OMP&R Costs to Be Reimbursed Through Variable  
OMP&R Component of Transportation Charge

Sheet 1 of 3

Calendar Year	NORTH BAY AQUEDUCT				SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT			
	Reach 1	Reach 3A	Reach 3B	Total	Reach 1	Reach 1	Reach 4	Reach 14A	Reach 15A
	Barker Slough Pumping Plant	Cordelia Pumping Plant (Solano)	Cordelia Pumping Plant (Napa) (a)		South Bay & Del Valle Pumping Plants (b)	Banks Pumping Plant	Don Amigos Pumping Plant (c)	Buena Vista Pumping Plant	Wheeler Ridge Pumping Plant
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
1962	0	0	0	0	36,970	0	0	0	0
1963	0	0	0	0	57,711	0	0	0	0
1964	0	0	0	0	74,134	0	0	0	0
1965	0	0	0	0	142,609	0	0	0	0
1966	0	0	0	0	192,805	0	0	0	0
1967	0	0	0	0	223,117	13,881	0	0	0
1968	0	0	6,989	6,989	336,671	452,630	202,947	0	0
1969	0	0	8,551	8,551	257,579	293,741	135,425	0	0
1970	0	0	13,598	13,598	396,358	346,215	211,198	0	0
1971	0	0	10,609	10,609	381,662	574,015	225,188	138,001	17,664
1972	0	0	14,434	14,434	598,702	927,369	498,482	234,626	89,516
1973	0	0	14,449	14,449	493,490	685,014	379,305	303,105	275,021
1974	0	0	17,473	17,473	565,575	769,839	438,997	344,632	350,558
1975	0	0	14,779	14,779	349,758	1,330,133	514,241	542,726	585,744
1976	0	0	20,856	20,856	571,361	1,456,742	562,537	609,257	600,780
1977	0	0	22,635	22,635	512,996	801,033	211,120	166,598	173,208
1978	0	0	21,692	21,692	586,355	2,215,828	574,813	658,309	578,337
1979	0	0	16,237	16,237	605,136	3,431,968	973,702	760,080	724,534
1980	0	0	19,945	19,945	523,369	1,882,630	1,010,938	853,317	826,802
1981	0	0	23,848	23,848	567,852	3,905,322	1,913,569	1,294,300	1,274,297
1982	0	0	12,159	12,159	531,147	3,054,474	1,360,551	1,196,255	1,208,785
1983	0	0	2,670	2,670	142,803	925,274	384,205	369,636	337,471
1984	0	0	4,507	4,507	254,046	1,747,335	903,969	642,644	569,853
1985	0	0	10,022	10,022	504,572	3,336,303	1,666,483	1,449,827	1,440,417
1986	0	0	15,406	15,406	828,230	7,064,638	2,614,148	2,401,271	2,427,971
1987	0	0	27,269	27,269	872,737	7,216,964	2,516,674	2,222,483	2,202,180
1988	14,617	0	27,234	41,851	908,397	7,481,079	2,639,548	2,584,567	2,583,327
1989	22,427	52,439	14,343	89,209	1,286,856	10,756,745	4,198,291	4,137,090	4,149,637
1990	80,526	63,941	29,036	173,503	1,860,934	11,385,029	4,309,705	5,777,085	6,011,517
1991	42,232	33,042	18,967	94,241	833,620	4,612,161	1,057,668	1,794,745	2,183,925
1992	107,600	96,938	65,125	269,663	2,430,471	22,794,658	9,193,011	9,483,077	10,632,627
1993	203,230	117,077	79,521	399,828	2,606,735	23,699,598	9,726,850	9,947,025	11,187,679
1994	138,760	117,489	96,742	352,991	3,534,237	31,345,855	12,933,437	13,728,101	15,526,782
1995	171,888	177,206	105,534	454,628	3,683,122	32,259,744	13,311,799	14,170,024	16,031,185
1996	190,003	134,644	129,056	453,703	3,861,737	34,031,161	14,214,833	15,650,039	17,865,124
1997	214,427	150,986	148,515	513,928	4,226,805	36,557,732	15,294,456	16,926,486	19,327,808
1998	224,759	157,098	158,422	540,279	4,254,189	37,097,266	15,474,100	17,168,022	19,614,092
1999	232,445	161,564	166,564	560,573	4,228,428	36,721,016	15,318,960	16,932,106	19,332,410
2000	253,058	174,996	183,982	612,036	4,429,958	38,750,606	16,183,970	18,045,987	20,632,486
2001	258,942	179,944	192,705	631,591	4,439,197	38,848,486	16,236,767	18,124,206	20,724,765
2002	266,751	186,423	203,091	656,265	4,479,452	39,136,539	16,365,789	18,260,023	20,879,438
2003	275,639	193,680	214,225	683,544	4,535,849	39,506,624	16,546,387	18,461,867	21,109,342
2004	288,229	203,702	228,446	720,377	4,646,033	40,618,125	17,016,873	19,069,000	21,816,593
2005	313,570	222,698	253,150	789,418	4,954,165	43,114,346	18,102,486	20,349,533	23,288,232
2006	316,851	222,362	261,385	800,598	4,946,709	43,053,078	18,098,204	20,358,619	23,300,616
2007	321,844	223,308	271,273	816,425	4,967,734	43,264,973	18,171,557	20,440,922	23,395,209
2008	328,163	224,928	282,018	835,109	5,003,778	43,572,224	18,319,081	20,627,468	23,612,020
2009	334,911	226,927	293,506	855,344	5,048,257	43,960,636	18,504,524	20,862,476	23,884,878
2010	342,854	229,554	306,117	878,525	5,106,709	44,496,829	18,721,781	21,126,657	24,190,288
2011	348,334	230,111	317,814	896,259	5,119,097	44,637,364	18,787,918	21,220,843	24,302,085
2012	354,560	231,139	330,300	915,999	5,141,961	44,871,666	18,885,179	21,341,618	24,443,179
2013	374,758	240,960	356,205	971,923	5,380,437	46,382,732	19,595,602	22,141,358	25,354,467
2014	385,025	244,473	373,509	1,003,007	5,438,590	47,289,000	19,938,127	22,591,305	25,879,785
2015	389,954	244,298	385,748	1,020,000	5,434,672	47,307,071	19,939,339	22,598,761	25,889,965
2016	394,151	244,175	397,450	1,035,776	5,431,966	47,156,907	19,889,809	22,512,065	25,784,108
2017	411,348	251,935	422,978	1,086,261	5,604,575	48,611,016	20,528,577	23,286,821	26,678,294
2018	414,950	251,371	435,321	1,101,642	5,592,045	48,540,634	20,499,733	23,260,705	26,650,018
2019	419,933	251,522	449,367	1,120,822	5,595,418	48,569,870	20,516,804	23,284,076	26,677,390
2020	418,661	248,088	457,030	1,123,779	5,519,004	47,995,668	20,265,018	22,996,810	26,349,612
2021	419,194	248,241	457,861	1,125,296	5,522,408	48,034,277	20,284,249	23,027,861	26,386,598
2022	418,759	247,944	457,724	1,124,427	5,515,782	47,895,367	20,245,262	22,968,508	26,318,027
2023	419,530	248,237	458,678	1,126,445	5,522,319	48,066,750	20,293,617	23,042,844	26,404,801
2024	418,305	247,512	457,887	1,123,704	5,506,198	47,977,882	20,225,321	22,957,041	26,304,789
2025	419,398	248,077	459,344	1,126,819	5,518,762	48,005,077	20,268,765	23,006,605	26,361,643
2026	419,475	248,123	459,429	1,127,027	5,519,785	48,049,189	20,291,583	23,042,621	26,405,183
2027	419,004	247,845	458,914	1,125,763	5,513,591	48,003,763	20,261,263	23,002,126	26,367,730
2028	419,677	248,242	459,650	1,127,569	5,522,439	48,083,212	20,303,037	23,059,927	26,425,702
2029	419,062	247,879	458,976	1,125,917	5,514,344	47,979,214	20,257,026	22,992,326	26,345,469
2030	419,810	248,321	459,797	1,127,928	5,524,196	48,100,250	20,312,396	23,072,675	26,440,501
2031	419,505	248,141	459,462	1,127,108	5,520,171	48,088,764	20,301,188	23,059,658	26,425,948
2032	419,074	247,886	458,990	1,125,950	5,514,506	48,014,046	20,267,248	23,010,195	26,367,229
2033	420,037	248,456	460,045	1,128,538	5,527,181	48,081,187	20,318,199	23,075,308	26,442,826
2034	419,308	248,024	459,246	1,126,578	5,517,585	48,060,555	20,293,296	23,052,014	26,417,356
2035	417,487	246,935	457,231	1,121,653	5,493,362	46,934,789	19,833,812	22,298,473	25,505,714
TOTAL	14,725,538	9,461,946	14,378,810	38,566,294	228,377,949	1,933,297,319	810,006,925	905,816,263	1,032,373,823

a) Costs for period 1968 through 1987 are for an interim facility.

b) The relatively minor costs of Del Valle Pumping Plant have been combined with those of South Bay Pumping Plant to simplify the allocation procedures.

c) Includes extra peaking costs assigned directly to Kern County Water Agency and Tulare Lake Basin Water Storage District. Refer to Appendix B text discussion of Table B-17 under "Project Water Charges."



TABLE B-12  
Variable OMP&R Costs to Be Reimbursed Through Variable  
OMP&R Component of Transportation Charge (Continued)

(in dollars)

Sheet 2 of 3

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	Reach 16A	Reach 17E	Reach 18A	Reach 22B	Reach 23	Reach 24	Reach 26A	Reach 28J	Reach 29A
	Chrisman Pumping Plant	Edmonston Pumping Plant	Alamo Powerplant	Pearblossom Pumping Plant	Mojave Siphon Powerplant	Silverwood Lake (d)	Devil Canyon Powerplant	Lake Perris (d)	Oso Pumping Plant
	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0
1972	165,589	494,616	0	23,387	0	4,216	(3,024)	0	93,212
1973	434,834	1,524,488	0	219,421	0	47,861	(436,769)	0	158,063
1974	589,117	2,058,680	0	315,705	0	98,179	(496,517)	52,549	189,479
1975	1,130,256	3,940,915	0	577,509	0	25,950	(1,033,054)	65,938	349,000
1976	1,222,413	4,235,934	0	869,201	0	122,336	(1,459,978)	104,257	245,397
1977	351,987	1,160,085	0	296,678	0	261,704	(1,115,096)	50,523	18,075
1978	1,034,893	3,636,671	0	1,551,015	0	0	(3,038,194)	0	69,043
1979	1,438,690	4,965,847	0	1,712,620	0	122,803	(3,159,826)	355,442	118,995
1980	1,634,049	5,416,333	0	1,733,275	0	154,695	(3,318,152)	0	36,761
1981	2,737,395	9,011,612	0	2,165,138	0	291,628	(2,377,087)	430,825	443,900
1982	2,416,093	8,326,450	0	1,489,997	0	0	(3,126,722)	0	539,246
1983	607,567	1,793,897	0	326,541	0	378,675	(5,497,700)	0	136,073
1984	1,061,329	3,226,910	0	587,001	0	0	(7,342,497)	(11,137)	228,202
1985	2,872,222	9,536,549	0	1,211,065	0	0	(10,475,497)	(50,137)	900,313
1986	4,990,691	16,921,966	(1,009,095)	2,357,866	0	0	(11,484,699)	0	1,265,840
1987	4,412,287	14,539,484	(989,134)	1,785,431	0	126,649	(10,517,482)	62,427	1,327,895
1988	5,178,458	17,004,535	(743,149)	2,404,392	0	39,273	(14,494,364)	0	1,430,260
1989	8,736,901	29,443,503	(712,107)	4,151,886	0	2,792,407	(18,231,381)	114,514	2,149,169
1990	13,610,264	48,297,718	(834,349)	6,496,107	0	97,428	(20,897,830)	148,228	2,853,352
1991	4,727,942	16,826,762	(643,174)	2,739,048	0	106,665	(13,547,530)	0	916,728
1992	21,805,248	76,040,298	(1,146,499)	11,833,650	0	0	(25,248,308)	2,395,085	4,647,432
1993	22,953,411	80,046,250	(1,230,577)	12,422,002	0	528,541	(26,517,320)	0	4,932,790
1994	32,182,457	112,859,788	(4,654,098)	17,254,941	(4,076,625)	0	(28,593,175)	212,705	6,850,990
1995	33,258,973	116,689,340	(4,192,559)	17,798,812	(7,323,218)	104,394	(28,685,207)	17,765	7,056,573
1996	37,268,560	130,688,868	(4,656,764)	20,739,492	(8,197,701)	270,911	(32,448,588)	295,799	7,509,671
1997	40,395,110	141,791,275	(4,716,529)	22,227,435	(8,748,895)	1,957,565	(32,373,974)	0	8,161,534
1998	41,000,997	143,931,696	(4,789,928)	22,706,399	(8,770,973)	0	(32,422,788)	0	8,223,230
1999	40,391,375	141,750,753	(4,697,248)	22,019,698	(8,333,455)	3,361,064	(32,489,096)	23,226	8,196,421
2000	43,173,237	151,627,415	(4,896,936)	23,979,050	(9,164,093)	0	(32,762,648)	43,261	8,556,983
2001	43,372,511	152,338,852	(4,902,202)	24,047,258	(8,697,101)	0	(32,933,351)	0	8,583,547
2002	43,696,563	153,475,659	(4,900,279)	24,177,920	(8,546,555)	563,599	(32,971,575)	0	8,629,902
2003	44,183,963	155,201,226	(4,827,651)	24,258,517	(8,344,529)	1,888,900	(32,988,938)	68,426	8,764,130
2004	45,697,350	160,575,328	(4,953,678)	25,263,648	(8,953,480)	0	(32,984,269)	0	8,965,652
2005	48,830,815	171,674,971	(4,981,722)	27,001,822	(9,287,596)	0	(32,981,499)	73,897	9,525,789
2006	48,861,509	171,789,903	(4,996,014)	27,073,516	(8,927,643)	0	(33,258,191)	0	9,512,426
2007	49,058,369	172,485,260	(5,019,540)	27,283,197	(9,096,072)	0	(33,298,130)	0	9,510,633
2008	49,524,054	174,134,357	(5,016,062)	27,493,006	(9,048,889)	518,031	(33,418,843)	0	9,619,861
2009	50,106,530	176,199,783	(5,047,503)	27,917,280	(9,276,084)	0	(33,483,539)	0	9,694,079
2010	50,758,985	178,515,527	(5,056,390)	28,337,680	(9,076,039)	0	(33,662,796)	0	9,797,053
2011	50,998,185	179,367,868	(5,058,004)	28,505,311	(8,927,085)	0	(33,823,595)	0	9,832,147
2012	51,298,761	180,430,858	(5,083,722)	28,730,334	(8,564,132)	0	(34,054,464)	0	9,867,108
2013	53,233,502	187,276,080	(5,031,084)	29,714,736	(8,468,694)	1,987,573	(34,175,911)	25,984	10,259,613
2014	54,359,067	191,280,097	(5,112,432)	30,533,752	(8,763,189)	0	(34,209,066)	0	10,406,784
2015	54,382,795	191,362,229	(5,104,882)	30,568,690	(9,293,915)	0	(34,126,457)	0	10,403,370
2016	54,147,774	190,514,923	(5,068,210)	30,356,946	(9,126,061)	1,887,034	(34,216,000)	0	10,395,680
2017	56,054,631	197,275,055	(5,103,068)	31,542,248	(9,171,373)	354,170	(34,303,605)	0	10,710,666
2018	55,995,346	197,065,617	(5,115,146)	31,567,759	(9,381,950)	152,428	(34,314,119)	0	10,678,399
2019	56,054,219	197,275,009	(5,131,183)	31,610,812	(9,402,531)	117,983	(34,334,184)	0	10,686,247
2020	55,357,445	194,809,027	(5,127,054)	31,229,427	(9,549,740)	29,220	(34,283,641)	118,303	10,554,126
2021	55,438,514	195,099,882	(5,136,892)	31,294,609	(9,533,450)	0	(34,349,380)	0	10,562,353
2022	55,285,390	194,552,355	(5,114,667)	31,158,031	(9,151,989)	721,713	(34,471,767)	30,948	10,550,552
2023	55,477,331	195,236,973	(5,123,332)	31,333,856	(9,330,677)	0	(34,464,708)	0	10,562,102
2024	55,264,575	194,482,888	(5,142,407)	31,263,607	(8,906,874)	0	(34,615,703)	0	10,501,163
2025	55,384,726	194,907,429	(5,112,304)	31,247,606	(8,875,117)	519,987	(34,615,747)	26,745	10,554,128
2026	55,477,809	195,238,027	(5,125,164)	31,344,268	(8,972,876)	0	(34,604,645)	30,268	10,557,652
2027	55,376,130	194,877,039	(5,133,534)	31,326,392	(9,004,136)	0	(34,613,331)	606	10,522,082
2028	55,522,908	195,400,040	(5,134,169)	31,380,355	(9,077,230)	0	(34,633,407)	0	10,561,308
2029	55,349,418	194,780,776	(5,128,560)	31,301,721	(8,978,672)	279,232	(34,637,062)	0	10,519,927
2030	55,554,522	195,511,999	(5,134,599)	31,405,870	(9,013,592)	0	(34,641,555)	0	10,564,528
2031	55,523,126	195,399,834	(5,133,774)	31,393,731	(8,985,136)	0	(34,661,972)	0	10,557,750
2032	55,396,354	194,948,362	(5,130,432)	31,313,898	(8,982,590)	258,783	(34,645,147)	86,022	10,535,613
2033	55,558,518	195,524,515	(5,155,595)	31,394,364	(9,159,532)	328,008	(34,626,632)	0	10,570,801
2034	55,505,328	195,337,846	(5,178,423)	31,406,453	(9,190,501)	0	(34,635,383)	0	10,545,751
2035	53,540,050	188,336,612	(5,123,593)	31,278,517	(9,611,319)	0	(34,500,078)	52,668	9,742,474
TOTAL	2,217,409,418	7,790,470,844	(217,555,417)	1,241,051,899	(371,091,309)	20,499,605	(1,596,133,193)	4,827,137	431,410,023

d) These values represent a proportionate allocation of the total variable OMP&R costs of pumping and recovery plants (Table B-3) associated with net annual withdrawals from storage for Project Transportation Facilities. The allocation is determined annually by applying the following ratio, calculated from the data shown in Table B-6: "Reservoir Storage Changes" (withdrawals, as a positive value) conveyed through each plant, in acre-feet, divided by "Total" annual quantity conveyed through each plant, in acre-feet. The costs so determined are accumulated for all upstream plants for each year, for each respective reservoir.

TABLE B-12  
Variable OMP&R Costs to Be Reimbursed Through Variable  
OMP&R Component of Transportation Charge (Continued)

		(in dollars)							Sheet 3 of 3
		CALIFORNIA AQUEDUCT (continued)							
Calendar		Reach 29G	Reach 29H	Reach 29J	Reach 30	Reach 31A	Reach 33A		
Year		Wame Powerplant	Pyramid Lake (d)	Castaic Powerplant	Castaic Lake (d)	Las Perillas & Badger Hill Pumping Plants (e)	Devil's Den, Bluestone & Polonio PP's San Luis Obispo Pwp	GRAND	
							Total	TOTAL	
		[19]	[20]	[21]	[22]	[23]	[24]	[25]	
								[26]	
1962		0	0	0	0	0	0	36,970	
1963		0	0	0	0	0	0	57,711	
1964		0	0	0	0	0	0	74,134	
1965		0	0	0	0	0	0	142,609	
1966		0	0	0	0	0	0	192,605	
1967		0	0	0	0	0	13,881	236,998	
1968		0	0	0	118,676	0	774,253	1,117,913	
1969		0	0	0	78,350	0	507,516	773,646	
1970		0	0	0	136,429	0	693,842	1,103,798	
1971		0	0	0	166,296	0	1,121,164	1,513,435	
1972		3,578	(193,058)	72,639	237,638	0	2,648,786	3,261,922	
1973		0	7,344	(1,057,564)	0	120,913	2,661,036	3,168,975	
1974		0	42,364	(1,540,853)	5,561	118,582	3,336,872	3,919,920	
1975		0	0	(2,445,397)	10,225	94,848	5,689,034	6,053,571	
1976		0	60,068	(1,940,099)	1,056,464	141,260	7,886,569	8,478,786	
1977		0	0	(607,380)	(1,211,050)	71,311	628,796	1,164,427	
1978		0	1,061,100	(1,542,479)	0	179,925	6,979,261	7,587,308	
1979		0	0	(2,384,748)	(12,206)	192,126	9,240,027	9,861,400	
1980		0	456,892	(984,154)	10,716	168,458	9,882,560	10,425,874	
1981		0	0	(4,018,743)	0	169,224	17,241,380	17,833,080	
1982		(782,509)	0	(3,463,971)	0	168,390	12,387,039	12,930,345	
1983		(851,084)	67,599	(4,416,766)	(1,609,357)	(10,845)	(7,058,814)	(6,913,341)	
1984		(2,006,054)	0	(750,974)	(668,085)	105,354	(1,706,150)	(1,447,597)	
1985		(5,957,634)	0	(13,032,444)	0	153,140	(6,949,393)	(6,434,789)	
1986		(5,634,005)	0	(11,168,505)	0	297,313	11,045,400	11,889,036	
1987		(6,292,329)	71,683	(11,562,308)	(37,021)	245,775	7,331,658	8,231,664	
1988		(6,979,774)	45,604	(12,292,778)	(178,832)	216,186	6,918,332	7,868,580	
1989		(8,198,356)	419	(14,576,552)	270,407	306,727	29,489,300	30,865,365	
1990		(11,003,895)	0	(20,105,033)	248,803	386,550	46,780,679	48,815,116	
1991		(5,899,813)	171,942	(11,158,543)	0	0	3,888,526	4,816,386	
1992		(12,145,622)	0	(21,679,792)	0	572,284	109,177,149	111,877,283	
1993		(12,699,766)	0	(22,664,725)	2,816,075	582,138	115,729,971	118,736,534	
1994		(15,283,986)	0	(24,693,914)	0	754,344	166,347,602	170,234,830	
1995		(15,363,287)	0	(24,791,626)	0	778,329	171,121,041	175,258,791	
1996		(15,836,499)	0	(25,609,878)	929,967	1,351,529	2,480,338	200,862,302	
1997		(16,038,359)	0	(25,899,279)	0	1,462,798	2,766,661	223,832,557	
1998		(16,092,394)	0	(25,872,482)	184,295	1,472,274	2,791,046	226,509,320	
1999		(16,119,174)	0	(25,928,162)	0	1,463,360	2,768,108	225,500,363	
2000		(16,131,822)	0	(25,907,397)	83,421	1,533,103	2,947,578	241,736,195	
2001		(16,131,605)	0	(25,928,947)	0	1,536,302	2,955,806	243,246,082	
2002		(16,086,430)	0	(25,832,186)	306,239	1,550,233	2,991,656	246,832,252	
2003		(16,140,985)	0	(25,922,575)	0	1,569,751	3,041,878	251,595,726	
2004		(16,138,686)	0	(25,921,208)	0	1,607,882	3,140,004	260,185,544	
2005		(16,156,198)	0	(25,923,055)	0	1,714,520	3,414,411	283,504,335	
2006		(16,143,886)	0	(25,920,004)	0	1,711,939	3,407,767	283,769,146	
2007		(16,103,605)	0	(25,801,249)	464,932	1,719,217	3,426,494	285,686,326	
2008		(16,156,738)	0	(25,917,671)	0	1,731,690	3,458,591	288,891,067	
2009		(16,157,031)	0	(25,896,293)	91,944	1,747,082	3,498,200	292,510,563	
2010		(16,131,982)	0	(25,882,753)	139,149	1,767,312	3,550,256	297,576,791	
2011		(16,128,857)	0	(25,913,386)	0	1,771,600	3,561,290	299,149,040	
2012		(16,125,584)	0	(25,897,079)	71,561	1,779,511	3,581,650	301,634,404	
2013		(16,119,222)	0	(25,889,479)	107,664	1,855,121	3,776,211	318,358,613	
2014		(16,132,374)	0	(25,904,888)	44,758	1,882,168	3,845,812	324,370,303	
2015		(16,162,607)	0	(25,918,091)	0	1,880,812	3,842,321	324,024,073	
2016		(16,138,135)	0	(25,907,527)	35,053	1,879,875	3,839,911	324,411,694	
2017		(16,166,520)	0	(25,918,648)	0	1,939,612	3,993,627	337,002,339	
2018		(16,154,054)	0	(25,894,340)	114,022	1,935,275	3,982,468	336,276,482	
2019		(16,143,911)	0	(25,896,664)	95,701	1,936,443	3,985,474	336,617,795	
2020		(16,169,338)	0	(25,914,256)	25,910	1,909,998	3,917,426	331,156,744	
2021		(16,166,651)	0	(25,919,160)	0	1,911,175	3,920,455	331,502,144	
2022		(16,167,256)	0	(25,919,273)	0	1,908,883	3,914,554	331,362,847	
2023		(16,156,475)	0	(25,917,341)	0	1,911,145	3,920,375	331,906,025	
2024		(16,086,726)	0	(25,834,474)	355,169	1,905,566	3,906,018	331,187,737	
2025		(16,139,205)	0	(25,914,143)	0	1,909,913	3,917,207	332,098,896	
2026		(16,141,956)	0	(25,915,474)	0	1,910,268	3,918,117	332,151,682	
2027		(16,097,448)	0	(25,853,364)	270,401	1,908,125	3,912,604	331,755,802	
2028		(16,140,510)	0	(25,914,631)	0	1,911,186	3,920,482	332,418,218	
2029		(16,091,779)	0	(25,844,461)	309,578	1,908,385	3,913,274	331,896,073	
2030		(16,139,272)	0	(25,914,383)	0	1,911,795	3,922,047	332,605,306	
2031		(16,150,650)	0	(25,915,273)	7,540	1,910,401	3,918,463	332,386,877	
2032		(16,116,885)	0	(25,883,244)	139,471	1,908,440	3,913,418	332,043,237	
2033		(16,142,224)	0	(25,915,462)	0	1,912,827	3,924,706	332,787,533	
2034		(16,125,393)	0	(25,895,007)	88,829	1,909,507	3,916,160	332,152,551	
2035		(14,857,730)	0	(23,972,532)	8,468,977	1,901,123	3,894,586	330,337,538	
TOTAL		(752,820,692)	1,791,957	(1,246,552,428)	13,773,670	77,160,478	143,697,450	12,827,565,797	

e) Includes extra peaking costs assigned directly to Kern County Water Agency. Refer to Appendix B text discussion of Table B-16A under "Project Water Charges."



TABLE B-13

# **Capital and Operating Costs of Project Conservation Facilities to Be Reimbursed Through Delta Water Charge**

(in dollars)

Calendar  Year	Initial Project Conservation Facilities (Portions of Upper Feather Lakes, Oroville-Thermalito and California Aqueduct Facilities)					Planning and Pre-operating Costs (a (f)	Total
	Capital Costs (a	Capital Cost Credits (b	Operating Costs (c (g	Application of Oroville Power Revenues to:			
				Capital Costs (d	Operating Costs (e		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
1952	171,322	0	0	0	0	0	171,322
1953	312,190	0	0	0	0	0	312,190
1954	308,624	0	0	0	0	0	308,624
1955	194,645	0	0	0	0	0	194,645
1956	1,357,077	0	0	0	0	0	1,357,077
1957	6,210,709	0	0	0	0	0	6,210,709
1958	9,510,916	0	0	0	0	0	9,510,916
1959	11,390,586	0	0	0	0	0	11,390,586
1960	14,456,356	(4,850,000)	0	0	0	0	9,606,356
1961	18,682,616	(431,527)	0	0	0	0	18,251,089
1962	9,012,960	(479,280)	0	0	0	0	8,533,680
1963	72,965,728	(478,743)	(14,000)	0	0	0	72,472,985
1964	62,490,522	(751,330)	(14,000)	0	0	107,780	61,832,972
1965	70,913,845	(763,541)	(14,000)	0	0	551,850	70,688,154
1966	125,205,400	(748,649)	(14,000)	0	0	1,081,023	125,523,774
1967	94,296,914	(812,145)	(13,446)	0	0	1,189,212	94,660,535
1968	39,888,442	(431,574)	1,303,821	(951,000)	0	793,399	40,603,088
1969	5,279,787	(259,015)	2,890,772	(11,007,000)	0	601,867	(2,493,589)
1970	4,130,490	(203,733)	4,818,634	(14,650,000)	(1,500,000)	516,659	(6,887,950)
1971	3,877,493	(193,631)	6,026,480	(14,650,000)	(1,500,000)	408,754	(6,030,904)
1972	4,569,025	(196,361)	5,378,401	(14,650,000)	(1,500,000)	287,374	(6,111,561)
1973	3,985,415	(136,997)	6,083,392	(14,650,000)	(1,500,000)	203,384	(6,014,806)
1974	6,659,999	(137,503)	6,873,552	(17,950,000)	(1,500,000)	201,907	(5,852,045)
1975	8,084,449	(234,567)	7,622,422	(14,650,000)	(1,500,000)	146,188	(531,508)
1976	5,870,528	(204,944)	6,956,842	(14,650,000)	(1,500,000)	205,234	(3,322,340)
1977	21,285,846	(150,214)	10,413,891	(14,650,000)	(1,500,000)	857,419	16,256,942
1978	7,713,249	(64,566)	12,750,917	(14,650,000)	(1,500,000)	2,131,286	6,380,886
1979	9,030,800	0	9,435,704	(14,650,000)	(1,500,000)	2,131,884	4,448,386
1980	10,372,762	0	13,066,808	(14,650,000)	(1,500,000)	3,734,312	11,023,882
1981	11,096,968	0	10,348,197	(14,650,000)	(1,500,000)	4,599,246	9,894,411
1982	16,486,519	0	14,869,819	(14,650,000)	(1,500,000)	4,594,682	19,801,020
1983	12,682,278	0	21,783,132	(14,650,000)	(1,500,000)	3,751,993	(5,222,597)
1984	10,189,235	0	22,020,562	(14,650,000)	(10,348,000)	3,743,484	10,955,281
1985	10,507,230	0	23,638,310	(14,650,000)	(8,079,000)	3,675,801	15,092,341
1986	18,417,129	0	25,247,571	(14,650,000)	(9,107,000)	3,104,934	23,012,634
1987	28,806,713	0	23,439,479	(14,650,000)	(9,451,000)	3,542,427	31,687,619
1988	26,643,210	0	24,933,664	(14,650,000)	(8,677,000)	3,734,971	31,984,845
1989	10,572,469	0	29,777,759	(16,116,000)	(8,773,000)	3,984,335	19,445,563
1990	25,189,459	0	42,031,241	(14,650,000)	(6,874,000)	3,229,338	48,926,038
1991	51,271,644	0	41,550,654	(14,650,000)	(7,874,000)	9,278,000	79,576,298
1992	25,321,950	0	44,211,395	(14,650,000)	(8,526,000)	11,915,000	58,272,345
1993	23,467,127	0	49,641,278	(14,650,000)	(8,802,000)	13,816,000	63,472,405
1994	13,430,340	0	48,954,157	(14,650,000)	(8,944,000)	13,807,000	52,597,497
1995	6,354,754	0	49,063,013	(14,650,000)	(8,944,000)	13,807,000	45,630,767
1996	1,238,602	0	50,033,256	(14,650,000)	(8,944,000)	13,807,000	41,484,858
1997	889,539	0	50,871,641	(14,650,000)	(8,944,000)	6,807,000	34,974,180
1998	889,240	0	49,208,072	(14,650,000)	(8,944,000)	6,807,000	33,310,312
1999	889,240	0	49,585,502	(14,650,000)	(8,944,000)	4,807,000	31,687,742
2000	889,240	0	49,077,686	(14,650,000)	(8,944,000)	4,807,000	31,179,926
2001	0	0	45,544,789	(14,650,000)	(8,944,000)	2,607,000	24,757,789
2002	0	0	45,761,867	(14,650,000)	(8,944,000)	2,607,000	24,974,667
2003	0	0	46,163,609	(14,706,000)	(8,888,000)	2,807,000	25,376,609
2004	0	0	45,810,081	(15,427,000)	(8,888,000)	2,807,000	24,302,081
2005	0	0	46,085,452	(15,427,000)	(8,888,000)	2,807,000	24,577,452
2006	0	0	46,626,905	(15,427,000)	(8,888,000)	2,807,000	25,118,905
2007	0	0	46,194,780	(15,427,000)	(8,888,000)	2,807,000	24,686,780
2008	0	0	46,594,231	(15,427,000)	(8,888,000)	2,807,000	25,086,231
2009	0	0	46,998,775	(15,427,000)	(8,888,000)	2,807,000	25,490,775
2010	0	0	46,586,003	(15,427,000)	(8,888,000)	2,807,000	25,078,003
2011	0	0	46,698,432	(15,427,000)	(8,888,000)	0	22,383,432
2012	0	0	46,594,236	(15,427,000)	(8,888,000)	0	22,279,236
2013	0	0	48,388,987	(15,427,000)	(8,888,000)	0	24,073,987
2014	0	0	46,768,699	(15,427,000)	(8,888,000)	0	22,453,899
2015	0	0	46,557,951	(15,427,000)	(8,888,000)	0	22,242,951
2016	0	0	47,153,871	(15,427,000)	(8,888,000)	0	22,838,871
2017	0	0	47,567,630	(15,427,000)	(8,888,000)	0	23,252,630
2018	0	0	47,584,677	(15,427,000)	(8,888,000)	0	23,269,677
2019	0	0	47,723,791	(15,427,000)	(8,888,000)	0	23,408,791
2020	0	0	47,522,847	(15,427,000)	(8,888,000)	0	23,207,847
2021	0	0	47,471,139	(15,427,000)	(8,888,000)	0	23,156,139
2022	0	0	48,160,842	(15,427,000)	(8,888,000)	0	23,845,642
2023	0	0	47,308,317	(15,427,000)	(8,888,000)	0	22,993,317
2024	0	0	46,524,533	(15,427,000)	(8,888,000)	0	22,209,533
2025	0	0	47,553,619	(15,427,000)	(8,888,000)	0	23,238,619
2026	0	0	47,645,558	(15,427,000)	(8,888,000)	0	23,330,558
2027	0	0	47,308,545	(15,427,000)	(8,888,000)	0	22,993,545
2028	0	0	47,519,877	(15,427,000)	(8,888,000)	0	23,204,877
2029	0	0	47,514,178	(15,427,000)	(8,888,000)	0	23,199,178
2030	0	0	47,566,534	(15,427,000)	(8,888,000)	0	23,251,534
2031	0	0	47,363,438	(15,427,000)	(8,888,000)	0	23,048,438
2032	0	0	47,336,777	(15,427,000)	(8,888,000)	0	23,021,777
2033	0	0	47,960,878	(15,427,000)	(8,888,000)	0	23,645,878
2034	0	0	47,321,182	(15,427,000)	(8,888,000)	0	23,006,182
2035	0	0	48,379,493	(15,427,000)	(8,888,000)	0	24,064,493
TOTAL	923,461,581	(11,528,320)	2,461,701,101	(1,028,599,000)	(488,546,000)	180,836,743	2,037,326,105

a) Reimbursed through the capital cost component of the Delta Water Charge.

b) Negotiated settlements as to the magnitude of SWP planning costs from 1952 through 1978.

c) Reimbursed through the minimum OMP&amp;R component of the Delta Water Charge. Credits for Gianelli power generation are reflected in these net costs.

d) Revenues credited through the capital cost component of the Delta Water Charge.

e) Revenue credits through the minimum OMP&amp;R component of the Delta Water Charge.

f) Under amendments of Articles 22(e) and 22(g), planning and pre-operating costs of additional Project Conservation Facilities incurred through the previous year (1990) are reflected in the Delta Water Charge.

g) Replacement account charges for the minimum OMP&amp;R component of the Delta Water Rate are zero for 1990 and 1992.

TABLE B-14  
Capital Costs of Transportation Facilities Allocated to Each Contractor

(in dollars)

Sheet 1 of 4

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County WA(a)	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1952	0	0	0	83	114	410	607	121	224	345
1953	0	0	0	324	479	1,808	2,611	336	619	955
1954	0	0	0	819	1,305	5,150	7,274	422	779	1,201
1955	0	0	0	976	1,570	6,297	8,843	211	388	599
1956	0	0	0	8,844	14,459	63,816	87,119	227	419	646
1957	15,199	11,435	26,634	21,563	35,239	649,598	706,400	290	535	825
1958	33,420	16,591	50,011	67,764	71,717	733,415	872,896	721	1,329	2,050
1959	20,697	6,591	27,288	154,254	143,731	493,049	791,034	25,853	53,921	79,774
1960	9,097	8,830	17,927	296,491	275,611	1,018,661	1,590,763	37,106	77,940	115,046
1961	6,950	7,445	14,395	853,505	802,675	1,914,709	3,570,889	15,637	31,207	46,844
1962	(195)	(925)	(1,120)	545,122	615,142	1,686,043	2,846,307	19,638	37,213	56,851
1963	1,320	1,110	2,430	657,426	1,281,271	3,243,839	5,182,536	73,102	136,561	209,663
1964	38,392	35,467	73,859	712,650	1,747,783	7,251,800	9,712,233	146,707	273,909	420,616
1965	198,833	62,221	261,054	360,779	606,026	3,414,457	4,381,262	261,448	486,412	747,860
1966	461,619	49,917	511,536	592,714	592,598	2,245,216	3,430,528	598,306	1,107,130	1,705,436
1967	1,569,498	40,379	1,609,877	796,993	803,951	2,401,863	4,002,807	947,498	1,751,608	2,699,106
1968	859,613	61,691	921,304	736,470	696,074	1,997,925	3,430,469	359,885	666,467	1,026,352
1969	74,389	59,317	133,706	269,698	293,274	764,952	1,327,924	84,313	157,235	241,548
1970	43,362	67,876	111,238	58,677	61,200	135,569	255,446	54,660	102,454	157,114
1971	26,764	34,051	60,815	12,086	18,227	84,089	114,402	37,649	71,701	109,350
1972	19,643	18,905	38,548	12,291	12,762	63,612	88,665	24,098	45,421	69,519
1973	56,510	30,874	87,384	10,494	12,137	39,380	62,011	27,479	51,710	79,189
1974	165,830	65,832	231,662	15,721	24,402	73,121	113,244	30,087	56,331	86,418
1975	91,825	89,233	181,058	16,730	15,807	41,394	73,931	25,395	50,761	76,156
1976	57,766	83,650	141,416	34,004	34,663	109,610	178,277	54,576	109,504	164,080
1977	64,167	80,147	144,314	46,229	45,116	133,374	224,719	130,013	243,030	373,043
1978	69,319	81,717	151,036	71,234	66,008	174,897	312,139	43,226	82,011	125,237
1979	191,272	282,908	474,180	45,469	42,942	110,667	199,078	51,321	97,291	148,612
1980	264,433	386,006	650,439	134,522	124,352	304,615	563,489	186,288	345,517	531,805
1981	227,598	383,083	610,681	(33,766)	(29,882)	(65,711)	(129,359)	(71,770)	(130,181)	(201,951)
1982	546,896	870,608	1,417,504	3,166	3,729	13,671	20,566	(44,905)	(82,034)	(126,939)
1983	1,254,498	1,433,060	2,687,558	134,897	127,859	328,435	591,191	30,493	57,436	87,929
1984	2,515,224	2,750,019	5,265,243	152,943	140,928	351,814	645,685	34,829	65,297	100,126
1985	7,098,476	6,443,613	13,542,089	18,267	17,771	49,369	85,407	20,569	40,517	61,086
1986	10,540,172	16,926,654	27,466,826	32,146	31,687	88,364	152,197	86,506	183,019	269,525
1987	7,966,290	12,601,450	20,567,740	51,521	50,029	143,454	245,004	431,889	948,652	1,380,541
1988	2,324,885	4,395,371	6,720,256	115,896	111,984	302,791	530,671	484,990	1,058,866	1,543,856
1989	1,056,412	1,571,760	2,628,172	115,487	109,813	279,823	505,123	408,550	880,894	1,289,444
1990	419,972	851,708	1,271,680	187,681	190,593	547,569	925,843	510,118	1,092,057	1,602,175
1991	84,129	46,871	131,000	278,081	261,628	661,510	1,201,219	1,544,983	3,246,941	4,791,924
1992	402,670	265,330	668,000	289,011	275,594	716,215	1,280,820	7,531,484	16,375,237	23,906,681
1993	85,927	158,073	244,000	454,655	417,736	1,005,883	1,878,274	28,029,861	55,036,528	83,066,389
1994	263,055	620,945	884,000	170,349	156,348	374,716	701,413	32,882,089	69,577,274	102,459,363
1995	1,297	703	2,000	2,389	2,492	7,091	11,972	22,051,951	51,683,212	73,735,163
1996	0	0	0	1,722	1,568	3,832	7,122	2,658,710	6,346,276	9,004,986
1997	0	0	0	800	727	1,782	3,309	92,735	182,555	275,290
1998	0	0	0	87	79	189	355	31,217	69,062	100,279
1999	0	0	0	87	79	189	355	31,217	69,062	100,279
2000	0	0	0	87	79	189	355	31,217	69,062	100,279
TOTAL	39,127,224	50,900,516	90,027,740	8,509,438	10,311,476	33,974,511	52,795,425	100,013,306	212,809,359	312,822,665

a) Costs from Table B-10 allocated to Solano County Water Agency are reduced herein by \$2,102,700 in 1986 and \$1,823,500 in 1987 under provisions of Amendment No. 10 to its water supply contract.

TABLE B-14  
Capital Costs of Transportation Facilities Allocated to Each Contractor (Continued)

(in dollars)

Sheet 2 of 4

Calendar  Year	SAN JOAQUIN VALLEY AREA									
	Dudley Ridge Water District	Empire West Side Irrigation District(c)	Future Contractor San Joaquin Valley	Kern County Water Agency			County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
				Municipal and Industrial	Agri- cultural	Total				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
1952	389	19	59	938	9,247	10,185	19	13	784	11,468
1953	1,076	53	161	2,888	27,725	30,613	56	33	2,158	34,150
1954	1,350	67	200	3,374	32,787	36,161	70	42	2,719	40,609
1955	676	36	100	1,498	14,916	16,414	36	22	1,371	18,655
1956	727	33	107	2,703	24,529	27,232	34	26	1,416	29,575
1957	932	38	139	6,047	50,427	56,474	38	30	1,707	59,358
1958	2,308	100	345	14,372	120,203	134,575	103	61	4,367	141,859
1959	7,384	363	2,517	26,219	256,487	282,706	372	381	14,757	308,480
1960	12,940	629	3,666	34,053	356,322	390,375	644	498	25,696	434,448
1961	21,849	1,063	3,957	51,406	545,210	596,616	1,087	599	43,376	668,547
1962	49,320	2,410	7,866	94,932	1,030,981	1,125,913	2,466	1,879	98,141	1,287,995
1963	208,758	10,686	32,171	364,014	3,990,352	4,354,366	10,933	5,990	425,330	5,048,234
1964	328,285	16,961	64,891	600,151	6,725,183	7,325,334	17,349	11,942	672,011	8,436,773
1965	538,215	27,481	117,998	1,098,999	12,152,825	13,251,824	28,115	21,802	1,095,126	15,080,561
1966	1,107,759	52,587	279,171	2,218,832	25,196,710	27,415,542	53,788	38,891	2,173,090	31,120,828
1967	852,537	39,539	445,560	2,012,745	23,916,017	25,928,762	40,444	34,775	1,653,428	28,995,045
1968	198,739	9,739	166,266	1,104,133	11,615,028	12,719,161	9,962	12,237	396,074	13,512,178
1969	94,436	4,794	35,472	616,518	6,443,362	7,059,880	4,902	7,302	191,574	7,398,360
1970	54,345	2,719	21,684	414,660	4,160,566	4,575,226	2,783	3,999	109,471	4,770,227
1971	25,462	1,290	12,094	190,552	1,629,387	1,819,939	1,320	540	51,620	1,912,265
1972	11,589	589	8,354	82,884	727,032	809,916	601	343	23,526	854,918
1973	6,657	336	10,202	39,975	460,508	500,483	341	220	13,449	531,688
1974	9,478	469	11,044	45,421	486,632	532,053	478	326	18,981	572,829
1975	13,328	678	5,245	36,469	386,455	422,924	692	426	27,049	470,342
1976	17,507	837	12,616	53,085	659,645	712,730	856	1,152	34,454	780,152
1977	9,671	437	47,790	36,478	890,425	926,903	445	494	18,496	1,004,236
1978	23,499	(30,407)	6,178	54,218	581,749	635,967	1,208	1,402	47,447	685,294
1979	25,051	1,295	5,665	53,867	566,357	620,224	1,324	1,862	51,294	706,715
1980	144,981	(4,617)	31,161	321,889	3,249,936	3,571,825	7,682	7,144	297,216	4,055,392
1981	(3,772)	(15,378)	443	(41,966)	(355,717)	(397,683)	(208)	1,751	(7,927)	(422,774)
1982	47,748	2,475	5,654	78,749	812,526	891,275	2,525	1,178	97,907	848,762
1983	54,422	(35,188)	11,934	112,917	1,110,750	1,223,667	2,877	1,269	111,490	1,370,471
1984	87,395	4,529	14,455	156,974	1,662,693	1,819,667	4,627	2,676	179,171	2,112,520
1985	27,470	1,418	5,681	49,943	521,146	571,089	1,450	1,151	56,211	664,470
1986	40,546	(40,952)	10,208	75,322	847,237	922,559	2,127	781	82,734	1,018,003
1987	42,864	2,206	9,318	78,540	883,944	962,484	2,255	1,517	87,584	1,108,228
1988	65,669	3,524	18,761	91,854	1,155,668	1,247,522	3,602	4,883	137,103	1,481,064
1989	164,136	8,430	29,905	366,921	4,051,275	4,418,196	8,622	12,360	334,977	4,976,626
1990	281,010	14,551	48,431	532,405	5,928,674	6,461,079	14,882	20,919	575,894	7,416,766
1991	341,160	17,587	74,339	578,046	6,665,731	7,243,777	18,003	30,515	697,564	8,422,945
1992	203,616	10,374	67,300	373,985	4,510,728	4,884,713	10,625	15,449	413,814	5,605,891
1993	135,921	7,034	24,758	224,212	2,538,645	2,762,857	7,212	12,778	278,489	3,229,049
1994	27,799	1,443	4,395	45,737	505,104	550,841	1,492	2,677	57,016	645,663
1995	791	41	319	2,212	18,688	20,900	57	49	1,587	23,744
1996	458	25	166	1,401	9,162	10,563	41	40	938	12,231
1997	12	1	49	649	205	854	17	1	24	958
1998	0	0	47	631	0	631	16	0	0	694
1999	0	0	47	631	0	631	16	0	0	694
2000	0	0	47	631	0	631	16	0	0	694
TOTAL	5,286,493	122,344	1,658,936	12,313,114	136,973,462	149,286,576	268,402	264,425	10,600,704	167,487,880

b) Costs from Table B-10 allocated to Devil's Den Water District are reduced herein by \$14,088 in 1978 in accordance with a letter of agreement with the district.

c) Costs from Table B-10 allocated to Empire West Side Irrigation District are reduced herein by \$31,588 in 1978; \$12,129 in 1980; \$15,173 in 1981; \$38,004 in 1983; and \$ in 1986 in accordance with letters of agreement with the district.

TABLE B-14  
Capital Costs of Transportation Facilities Allocated to Each Contractor (Continued)

Calendar Year	(in dollars)										Sheet 3 of 4
	SOUTHERN CALIFORNIA AREA										
	Antelope Valley- East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline- Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District	
	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]	
1952	3,157	1,044	850	252	1,405	72	1,695	418	6,079	1,547	
1953	10,024	3,326	2,667	800	4,401	221	5,322	1,327	19,058	4,855	
1954	12,741	4,194	3,464	1,032	5,714	298	6,911	1,692	24,608	6,289	
1955	5,411	1,879	1,376	398	2,266	115	2,753	713	9,227	2,376	
1956	9,773	3,588	2,197	615	3,621	192	4,449	1,268	13,136	3,437	
1957	26,304	9,255	6,342	1,818	10,462	541	12,769	3,451	40,646	10,536	
1958	49,201	17,599	11,582	3,291	19,099	990	23,359	6,416	72,709	18,896	
1959	70,246	29,741	15,870	4,614	26,170	1,346	31,757	9,029	98,594	25,519	
1960	84,550	38,759	22,068	6,794	36,393	1,548	43,258	10,770	147,170	37,468	
1961	126,540	54,258	34,617	12,534	57,086	2,250	63,709	16,436	236,163	57,706	
1962	198,556	85,350	43,721	13,859	72,100	3,347	84,710	24,943	253,432	64,329	
1963	580,138	255,252	116,797	33,149	192,624	9,829	234,926	73,257	610,278	160,623	
1964	1,094,365	501,857	209,460	55,448	345,447	18,442	429,607	137,768	1,026,065	276,115	
1965	1,908,076	947,523	385,531	103,756	635,821	32,816	786,986	244,589	1,913,091	512,861	
1966	3,960,301	2,150,974	812,657	215,858	1,340,233	69,326	1,664,584	517,268	3,943,586	1,062,420	
1967	4,976,539	4,100,533	1,077,423	296,069	1,776,895	88,302	2,182,238	653,250	5,821,682	1,550,237	
1968	5,924,471	3,998,943	1,350,742	368,157	2,227,645	107,350	2,738,008	783,940	7,982,824	2,122,941	
1969	5,822,708	3,079,427	1,690,259	539,852	2,787,631	121,302	3,256,507	865,454	10,898,186	2,769,647	
1970	5,032,961	3,277,780	2,050,790	695,344	3,382,250	106,383	3,872,369	736,777	13,795,811	3,457,106	
1971	2,577,508	2,146,955	1,071,521	338,583	1,767,179	48,337	2,087,224	347,057	8,137,052	1,987,119	
1972	973,434	283,255	331,757	92,077	547,138	19,134	668,550	134,359	2,691,133	697,957	
1973	354,409	914,305	158,582	82,223	261,558	6,304	238,095	46,103	1,760,569	403,583	
1974	451,451	280,865	259,176	74,112	427,434	8,143	518,452	59,144	1,617,393	425,927	
1975	253,437	246,493	193,631	52,820	319,338	4,954	392,109	33,995	1,533,663	407,917	
1976	237,537	255,240	136,750	37,235	225,528	4,245	277,805	31,001	962,276	255,900	
1977	198,550	372,505	91,384	25,857	150,713	3,755	183,607	26,835	591,447	155,535	
1978	302,110	470,179	78,574	22,228	129,585	5,233	157,814	38,655	428,988	111,769	
1979	373,165	938,984	84,815	22,504	139,544	6,222	172,735	46,354	416,123	111,853	
1980	1,893,991	1,777,296	428,552	114,380	706,771	32,879	874,026	244,223	2,062,219	553,972	
1981	(138,893)	612,146	(43,519)	(7,960)	(71,773)	(2,244)	(95,153)	(17,099)	(127,877)	(39,164)	
1982	1,526,899	854,058	291,822	77,080	481,265	25,703	599,366	192,691	1,385,708	378,632	
1983	2,030,149	530,796	389,141	113,865	641,768	34,146	789,867	255,804	2,091,985	572,433	
1984	1,511,244	296,896	296,251	84,768	488,576	27,153	603,425	187,869	1,533,298	419,802	
1985	896,590	158,172	216,719	62,407	357,413	13,105	440,543	107,555	1,107,842	302,891	
1986	846,134	106,866	222,212	58,421	366,466	9,116	456,805	93,896	1,053,452	287,628	
1987	360,728	117,878	172,067	45,543	283,770	6,035	352,826	44,220	812,351	221,008	
1988	283,239	183,236	70,423	23,954	116,143	3,772	137,773	29,701	451,146	119,506	
1989	1,076,859	450,575	331,240	99,317	546,278	17,307	665,991	129,290	1,421,830	384,326	
1990	615,233	355,014	298,772	90,095	492,734	6,572	601,400	61,669	1,329,203	360,033	
1991	856,875	531,689	570,629	212,135	941,079	15,408	1,116,276	111,671	3,825,209	1,044,203	
1992	667,246	488,300	316,276	194,444	521,612	11,725	546,121	85,996	3,679,657	1,000,325	
1993	268,407	300,847	77,670	73,341	128,088	4,552	111,915	33,961	2,248,713	609,732	
1994	51,521	61,121	21,299	31,733	35,127	868	20,146	6,514	867,410	235,827	
1995	4,459	2,500	3,053	5,198	5,039	80	2,279	579	92,363	25,306	
1996	2,652	1,549	541	145	892	44	1,103	335	2,727	733	
1997	1,507	756	272	68	448	26	564	189	1,216	335	
1998	1,487	610	268	87	442	25	557	187	1,201	331	
1999	1,487	610	268	67	442	25	557	187	1,201	331	
2000	1,487	610	268	67	442	25	557	187	1,201	331	
TOTAL	48,377,964	31,301,588	13,908,627	4,380,394	22,938,302	877,309	27,369,252	6,421,694	88,893,044	23,180,989	

TABLE B-14

## Capital Costs of Transportation Facilities Allocated to Each Contractor (Continued)

(in dollars)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Geronimo Pass Water Agency	The Metropolitan Water District of Southern California(e)	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]
1952	963	69,021	371	86,874	0	0	0	0	59	99,353
1953	3,011	217,635	1,186	273,833	0	0	0	0	263	311,812
1954	3,903	279,966	1,492	352,292	0	0	0	0	767	402,143
1955	1,473	111,618	671	140,276	0	0	0	0	969	169,342
1956	2,123	179,340	1,299	225,038	0	0	0	0	9,173	351,551
1957	6,526	516,047	3,365	648,062	0	0	0	0	23,173	1,464,452
1958	11,701	945,682	6,392	1,186,917	0	0	2	2	32,888	2,286,623
1959	15,817	1,364,307	9,893	1,702,903	0	0	14	14	57,919	2,967,412
1960	23,309	1,914,533	12,799	2,379,419	0	0	28	28	123,202	4,660,833
1961	36,154	3,212,117	18,768	3,928,338	0	0	10	10	316,221	8,545,244
1962	40,012	3,543,478	29,068	4,456,905	0	0	32	32	228,201	8,875,171
1963	99,266	11,185,924	86,806	13,638,869	0	0	51	51	528,495	24,610,278
1964	170,010	18,065,460	164,709	22,494,753	0	0	7,791	7,791	590,035	41,736,060
1965	316,082	33,763,578	307,475	41,858,187	0	0	3,139	3,139	332,680	62,664,743
1966	654,195	74,485,021	681,899	91,558,322	0	0	(48)	(48)	783,728	129,110,330
1967	958,408	130,599,410	1,279,076	155,360,662	0	0	47	47	1,479,421	194,146,365
1968	1,314,842	147,602,292	1,360,688	177,782,843	0	0	51,573	51,573	1,254,192	197,978,911
1969	1,726,890	140,096,647	1,085,028	174,739,538	0	0	234,232	234,232	398,182	184,473,490
1970	2,160,120	161,983,071	1,147,608	201,698,370	0	0	16,227	16,227	74,028	207,082,650
1971	1,237,575	133,903,313	738,824	156,388,247	0	0	27,204	27,204	12,456	158,624,739
1972	434,505	43,929,235	66,878	50,869,412	0	0	9	9	13,183	51,934,254
1973	256,715	39,722,992	290,020	44,495,458	0	0	25	25	8,098	45,263,853
1974	264,348	18,896,593	86,361	23,369,399	0	0	45	45	28,569	24,402,166
1975	253,840	16,732,933	83,976	20,509,106	0	0	21	21	8,224	21,318,838
1976	158,851	13,545,457	84,624	16,212,449	0	0	51	51	16,485	17,492,910
1977	96,516	11,797,207	111,213	13,806,124	0	0	28	28	21,182	15,573,646
1978	69,151	15,781,693	174,876	17,770,855	0	0	38	38	28,876	19,073,475
1979	68,964	27,694,666	343,358	30,419,087	0	0	23	23	26,667	31,974,362
1980	341,427	59,608,717	641,585	69,280,038	0	0	26	26	59,168	75,140,357
1981	(23,660)	15,780,037	224,715	16,049,556	0	0	34	34	(6,763)	15,899,424
1982	232,855	30,474,820	313,661	36,834,540	0	0	11	11	13,817	39,008,261
1983	352,111	25,135,034	190,845	33,127,944	0	0	19	19	70,455	37,935,567
1984	258,079	16,274,885	103,545	22,085,591	0	0	26	26	83,234	30,292,425
1985	186,190	10,178,001	56,045	14,083,473	0	0	29	29	15,669	28,452,223
1986	176,872	8,440,413	35,450	12,153,731	0	0	31	31	16,296	41,076,609
1987	135,857	7,406,399	40,162	9,998,944	0	0	32	32	29,872	33,330,361
1988	73,861	6,974,046	60,273	8,527,073	0	0	41	41	50,743	18,853,704
1989	235,363	19,171,071	158,270	24,887,717	0	0	52	52	47,030	34,134,164
1990	220,520	16,002,088	118,632	20,551,965	0	0	39	39	86,492	31,854,960
1991	642,150	34,498,634	168,019	44,533,977	0	0	0	0	116,956	59,198,021
1992	616,216	31,860,682	152,396	40,140,996	0	0	0	0	120,659	71,723,047
1993	378,727	19,678,037	104,754	24,018,744	0	0	0	0	156,190	112,592,646
1994	146,218	6,200,182	21,670	7,699,636	0	0	0	0	58,321	112,448,396
1995	15,557	559,905	786	717,104	0	0	0	0	2,019	74,492,002
1996	453	55,015	502	66,691	0	0	0	0	1,783	9,092,813
1997	206	27,051	262	32,900	0	0	0	0	869	313,326
1998	203	22,225	218	27,821	0	0	0	0	31	129,180
1999	203	22,225	218	27,821	0	0	0	0	31	129,180
2000	203	22,225	218	27,821	0	0	0	0	31	129,180
TOTAL	14,374,981	1,360,430,928	10,570,949	1,653,026,021	0	0	340,882	340,882	7,320,239	2,283,820,852

e) Costs from Table B-10 allocated to MWDSC are reduced herein by \$16,428,037 in 1972 under provisions of Amendment No. 7 to its water contract.

TABLE B-15  
Capital Cost Component of Transportation Charge for Each Contractor <sup>a, b</sup>

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County WA	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	106,865	107,537	372,612	587,014	9,067	17,954	27,021
1964	0	0	0	126,303	173,860	540,525	840,688	14,937	28,951	43,888
1965	0	0	0	159,504	264,332	915,902	1,339,738			
1966	18,399	0	18,399	176,312	295,702	1,092,646	1,564,660	24,387	46,596	70,983
1967	42,294	0	42,294	203,925	326,376	1,208,866	1,739,167	43,009	81,124	124,133
1968	123,537	0	123,537	241,054	367,992	1,333,195	1,942,241	57,560	108,154	165,714
1969	168,033	0	168,033	275,365	404,023	1,436,614	2,116,002	61,388	115,347	176,735
1970	171,884	0	171,884	287,929	419,204	1,476,210	2,183,343	63,436	119,212	182,648
1971	174,129	0	174,129	290,663	422,372	1,483,228	2,196,263	64,794	121,801	186,595
1972	175,514	0	175,514	336,761	423,315	1,487,581	2,247,657	65,844	123,854	189,698
1973	176,531	32,062	208,593	337,398	423,976	1,490,873	2,252,247	66,373	124,881	191,254
1974	179,456	33,660	213,116	337,941	424,604	1,492,912	2,255,457	66,798	125,717	192,515
1975	188,040	37,068	225,108	338,755	425,867	1,496,697	2,261,319	67,312	126,708	194,020
1976	192,793	41,687	234,480	339,621	426,685	1,498,840	2,265,146	177,074	329,408	506,482
1977	195,763	46,017	241,780	341,381	428,480	1,504,513	2,274,374	179,899	335,076	514,975
1978	199,105	50,165	249,270	343,774	430,815	1,511,417	2,286,006	186,629	347,656	534,285
1979	202,693	54,395	257,088	347,461	434,232	1,520,471	2,302,164	188,866	351,902	540,768
1980	212,594	69,040	281,634	349,815	436,454	1,526,199	2,312,468	191,523	356,938	548,461
1981	226,282	89,021	315,303	356,778	442,891	1,541,967	2,341,636	201,166	374,823	575,989
1982	238,063	108,850	346,913	355,030	441,345	1,538,565	2,334,940	197,451	368,084	565,535
1983	266,372	153,916	420,288	355,194	441,538	1,539,273	2,336,005	195,128	363,838	558,964
1984	331,309	228,096	559,405	382,177	448,156	1,556,274	2,366,607	196,705	366,811	563,516
1985	461,506	370,446	831,952	370,094	455,451	1,574,485	2,400,030	198,508	370,191	568,699
1986	828,947	703,989	1,532,936	371,039	456,371	1,577,041	2,404,451	199,572	372,288	571,860
1987	1,377,414	1,584,782	2,962,196	372,712	458,020	1,581,639	2,412,371	204,074	381,812	585,886
1988	1,794,244	2,244,144	4,038,388	375,408	460,637	1,589,145	2,425,190	226,672	431,449	658,121
1989	1,916,602	2,475,471	4,392,073	381,507	466,531	1,605,081	2,453,119	252,197	487,177	739,374
1990	1,972,543	2,558,701	4,531,244	387,623	472,346	1,619,898	2,479,867	273,831	533,824	807,655
1991	1,994,926	2,604,094	4,599,020	397,625	482,504	1,649,082	2,529,211	301,019	592,026	893,045
1992	1,999,440	2,606,609	4,606,049	412,543	496,539	1,684,569	2,593,651	383,919	766,250	1,150,169
1993	2,021,203	2,620,950	4,642,153	428,158	511,430	1,723,268	2,662,856	790,970	1,651,283	2,442,253
1994	2,025,883	2,629,558	4,655,441	452,914	534,175	1,778,037	2,765,126	2,317,432	4,648,487	6,965,919
1995	2,040,323	2,663,646	4,703,969	462,260	542,753	1,798,597	2,803,610	4,122,513	8,467,973	12,590,486
1996	2,040,395	2,663,685	4,704,080	462,388	542,887	1,798,979	2,804,254	5,343,327	11,329,199	16,672,526
1997	2,040,395	2,663,685	4,704,080	462,479	542,970	1,799,183	2,804,632	5,498,782	11,899,062	17,197,844
1998	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
1999	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2000	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2001	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2002	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2003	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2004	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2005	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2006	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2007	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2008	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2009	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2010	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2011	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2012	2,040,395	2,663,685	4,704,080	462,519	543,007	1,799,272	2,804,798	5,502,250	11,705,461	17,207,711
2013	2,040,395	2,663,685	4,704,080	349,781	435,469	1,426,660	2,211,910	5,022,250	11,705,461	17,207,711
2014	2,040,395	2,663,685	4,704,080	313,979	369,146	1,258,748	1,941,873	5,493,183	11,687,507	17,180,690
2015	2,040,395	2,663,685	4,704,080	275,462	278,675	883,370	1,437,507	5,487,313	11,676,510	17,163,823
2016	2,021,996	2,663,685	4,685,681	256,102	247,305	706,626	1,210,033	5,477,863	11,658,865	17,136,728
2017	1,998,101	2,663,685	4,661,786	224,512	216,630	590,406	1,031,548	5,459,241	11,624,337	17,083,578
2018	1,916,858	2,663,685	4,580,543	182,309	175,015	466,078	823,402	5,444,690	11,597,307	17,041,997
2019	1,872,362	2,663,685	4,536,047	143,549	138,984	382,658	645,191	5,440,862	11,590,114	17,030,976
2020	1,868,511	2,663,685	4,532,196	129,437	123,803	323,062	576,302	5,438,814	11,586,249	17,025,063
2021	1,866,267	2,663,685	4,529,952	126,384	120,635	316,044	563,063	5,437,457	11,583,680	17,021,117
2022	1,864,881	2,663,685	4,528,566	125,758	119,692	311,682	557,142	5,436,407	11,581,607	17,018,014
2023	1,863,865	2,631,623	4,495,488	125,122	119,031	308,399	552,532	5,435,877	11,580,581	17,016,458
2024	1,860,939	2,630,024	4,490,963	124,579	118,403	306,361	549,343	5,435,452	11,579,744	17,015,196
2025	1,852,355	2,626,617	4,478,972	123,765	117,140	302,576	543,481	5,434,938	11,578,753	17,013,691
2026	1,847,602	2,621,998	4,469,600	122,899	116,321	300,433	539,653	5,325,176	11,376,053	16,701,229
2027	1,844,612	2,617,668	4,462,280	121,139	114,527	294,759	530,425	5,322,351	11,370,385	16,692,736
2028	1,841,291	2,613,519	4,454,810	118,746	112,192	287,855	518,793	5,315,621	11,357,805	16,673,426
2029	1,837,702	2,609,289	4,446,991	115,058	108,775	278,802	502,635	5,313,384	11,353,559	16,666,943
2030	1,827,802	2,594,645	4,422,447	112,705	106,552	273,073	492,330	5,310,727	11,348,523	16,659,250
2031	1,814,114	2,574,664	4,388,778	105,741	100,115	257,305	463,161	5,301,084	11,330,638	16,631,722
2032	1,802,332	2,564,834	4,367,166	107,489	101,662	260,707	469,858	5,304,799	11,337,377	16,642,176
2033	1,774,023	2,509,769	4,283,792	107,325	101,489	259,999	468,793	5,307,124	11,341,623	16,648,747
2034	1,709,086	2,435,589	4,144,675	100,343	94,851	242,998	438,192	5,305,545	11,338,650	16,644,195
2035	1,578,890	2,293,238	3,872,128	92,426	87,556	224,787	404,769	5,303,743	11,335,270	16,639,013
TOTAL	99,587,331	129,239,339	228,826,670	22,249,151	26,601,423	88,576,862	137,427,436	228,999,811	486,168,349	715,168,160

a) Unadjusted for prior overpayments of charges.  
b) Determined at the current Project Interest Rate of 4.713 percent per annum.

TABLE B-15

## Capital Cost Component of Transportation Charge for Each Contractor (Continued)

Calendar Year	(in dollars)										Sheet 2 of 4	
	SAN JOAQUIN VALLEY AREA											
	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency			County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total		
				Municipal and Industrial	Municipal and (c Industrial	Agri- cultural						
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]		
1961	0	0	0	0	0	0	0	0	0	0		
1962	0	0	0	0	0	0	0	0	0	0		
1963	0	0	0	0	0	0	0	0	0	0		
1964	0	0	2,772	0	0	0	0	0	0	2,772		
1965	0	0	6,131	65,409	9,446	0	0	0	0	80,986		
1966	0	0	12,239	122,297	17,362	0	0	0	0	151,898		
1967	0	0	26,690	237,151	34,921	0	0	0	0	298,762		
1968	75,912	2,460	49,753	341,338	49,777	421,829	8,656	4,807	64,832	1,019,364		
1969	76,045	7,381	58,360	398,492	53,405	866,289	9,172	5,224	245,304	1,719,672		
1970	83,344	7,381	60,196	430,405	54,814	1,053,669	9,426	5,433	181,530	1,886,198		
1971	95,023	7,381	61,318	451,869	55,617	1,399,460	9,570	5,851	193,174	2,279,263		
1972	106,171	7,381	61,944	461,732	55,985	2,095,569	9,638	11,214	595,928	3,405,562		
1973	116,788	7,381	62,377	486,023	56,162	2,416,920	9,669	6,478	230,496	3,372,294		
1974	177,252	7,381	62,905	468,092	56,264	2,706,588	9,687	7,254	382,585	3,878,008		
1975	215,288	7,381	63,477	470,443	56,407	3,241,751	9,712	7,473	456,515	4,528,447		
1976	164,146	7,381	63,748	472,331	56,599	3,494,577	9,748	8,441	326,580	4,603,551		
1977	161,380	7,381	64,401	475,079	56,890	3,829,053	9,792	7,732	312,254	4,923,962		
1978	172,528	7,381	66,875	476,967	57,084	4,256,314	9,815	8,150	335,011	5,390,121		
1979	204,613	7,381	67,195	479,774	57,425	4,673,617	9,877	8,359	377,038	5,885,279		
1980	217,651	7,381	67,488	482,562	57,767	5,099,973	9,946	11,912	379,468	6,334,148		
1981	217,651	7,381	69,101	499,224	58,741	5,581,546	10,344	8,986	402,225	6,856,199		
1982	217,651	7,381	69,124	497,052	59,700	6,026,006	10,333	9,404	424,453	7,321,104		
1983	227,737	7,381	69,417	501,128	60,349	6,532,021	10,464	9,613	50,532	7,468,642		
1984	239,416	7,381	70,034	506,973	61,092	6,852,466	10,612	10,031	331,365	8,089,370		
1985	250,564	7,381	70,783	515,098	62,285	7,296,926	10,852	10,240	241,065	8,465,194		
1986	261,712	7,381	71,077	517,684	62,662	7,737,765	10,927	10,658	514,425	9,194,291		
1987	272,859	7,381	71,608	521,603	63,229	8,186,751	11,038	10,867	536,653	9,681,989		
1988	284,007	7,381	72,095	525,713	63,840	8,605,865	11,156	11,285	558,881	10,140,223		
1989	295,155	7,381	73,083	530,547	64,658	8,908,206	11,345	11,703	581,636	10,483,716		
1990	306,303	7,381	74,686	549,977	67,047	9,222,315	11,802	11,912	627,153	10,878,556		
1991	306,303	7,381	77,248	578,352	71,539	9,222,315	12,595	11,912	627,153	10,914,798		
1992	306,303	7,381	81,234	609,336	76,393	9,222,315	13,560	11,912	627,153	10,955,587		
1993	306,303	7,381	84,869	629,515	79,388	9,222,315	14,133	11,912	627,153	10,982,969		
1994	306,303	7,381	86,215	641,691	81,334	9,222,315	14,525	11,912	627,153	10,998,829		
1995	306,303	7,381	86,453	644,167	81,734	9,222,315	14,606	11,912	627,153	11,002,024		
1996	306,303	7,381	86,468	644,255	81,746	9,222,315	14,608	11,912	627,153	11,002,141		
1997	306,303	7,381	86,475	644,298	81,753	9,222,315	14,610	11,912	627,153	11,002,200		
1998	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
1999	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2000	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2001	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2002	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2003	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2004	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2005	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2006	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2007	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2008	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2009	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2010	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2011	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2012	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2013	306,303	7,381	86,475	644,299	81,753	9,222,315	14,610	11,912	627,153	11,002,201		
2014	306,303	7,381	83,703	644,299	81,753	9,222,315	14,610	11,912	627,153	10,999,429		
2015	306,303	7,381	80,344	578,889	72,308	9,222,315	14,610	11,912	627,153	10,921,215		
2016	306,303	7,381	74,236	522,001	64,391	9,222,315	14,610	11,912	627,153	10,850,302		
2017	306,303	7,381	59,786	407,147	46,832	9,222,315	14,610	11,912	627,153	10,703,439		
2018	306,303	7,381	36,722	302,961	31,976	9,222,315	5,963	11,912	627,153	10,552,676		
2019	306,303	7,381	28,115	245,807	28,349	9,222,315	5,438	11,912	627,153	10,482,773		
2020	306,303	7,381	26,279	213,894	26,940	9,222,315	5,184	11,912	627,153	10,447,361		
2021	306,303	7,381	25,157	192,430	26,136	9,222,315	5,040	11,912	627,153	10,423,827		
2022	306,303	7,381	24,531	182,566	25,768	9,222,315	4,972	11,912	627,153	10,412,901		
2023	306,303	7,381	24,098	178,276	25,592	9,222,315	4,941	11,912	627,153	10,407,971		
2024	306,303	7,381	23,570	176,207	25,489	9,222,315	4,923	11,912	627,153	10,405,253		
2025	306,303	7,381	22,999	173,855	25,346	9,222,315	4,898	11,912	627,153	10,402,162		
2026	306,303	7,381	22,727	171,968	25,154	9,222,315	4,862	11,912	627,153	10,399,775		
2027	306,303	7,381	22,074	169,220	24,863	9,222,315	4,818	11,912	627,153	10,396,039		
2028	306,303	7,381	19,600	167,332	24,669	9,222,315	4,795	11,912	627,153	10,391,460		
2029	306,303	7,381	19,280	164,525	24,328	9,222,315	4,732	11,912	627,153	10,387,929		
2030	306,303	7,381	18,987	161,737	23,986	9,222,315	4,664	11,912	627,153	10,384,438		
2031	306,303	7,381	17,374	145,075	22,013	9,222,315	4,266	11,912	627,153	10,363,792		
2032	306,303	7,381	17,351	147,247	22,054	9,222,315	4,277	11,912	627,153	10,365,993		
2033	306,303	7,381	17,059	143,171	21,405	9,222,315	4,146	11,912	627,153	10,360,845		
2034	306,303	7,381	16,441	137,326	20,661	9,222,315	3,997	11,912	627,153	10,353,489		
2035	306,303	7,381	15,693	129,200	19,468	9,222,315	3,758	11,912	627,153	10,343,183		
TOTAL	18,222,831	496,987	4,237,545	31,520,494	3,981,944	525,509,651	710,082	739,067	36,570,990	621,989,591		

c) Charges under Amendment No. 18 of the water supply contract with Kern County Water Agency.



TABLE B-15  
Capital Cost Component of Transportation Charge for Each Contractor (Continued)

(in dollars)

Sheet 3 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley- East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline- Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	33,938	0	0	0	0	0	0	0	52,694	0
1964	63,968	27,939	14,690	4,450	37,841	1,164	28,956	8,354	84,285	35,635
1965	120,616	53,917	25,533	7,320	41,467	2,119	51,194	15,485	137,397	35,953
1966	219,384	102,964	45,489	12,691	74,379	3,817	91,931	28,146	236,425	62,500
1967	424,383	214,306	87,555	23,864	143,754	7,406	178,096	54,921	440,559	117,495
1968	681,985	426,563	143,326	39,190	235,732	11,977	291,056	88,736	741,908	197,740
1969	988,656	633,562	213,245	58,247	351,042	17,534	432,784	129,315	1,155,126	307,631
1970	1,290,059	792,964	300,739	86,191	495,340	23,813	601,352	174,114	1,719,253	450,997
1971	1,550,582	962,633	406,894	122,185	670,416	29,319	801,799	212,252	2,433,371	629,948
1972	1,684,003	1,073,766	462,360	139,711	761,891	31,821	909,841	230,217	2,854,573	732,808
1973	1,734,391	1,088,429	479,533	144,477	790,213	32,812	944,447	237,172	2,993,875	768,937
1974	1,752,736	1,135,756	487,741	148,733	803,752	33,138	956,772	239,558	3,085,008	789,828
1975	1,776,105	1,150,295	501,157	152,570	825,878	33,560	983,609	242,620	3,168,729	811,875
1976	1,789,224	1,163,054	511,180	155,304	842,408	33,816	1,003,906	244,379	3,248,117	832,991
1977	1,801,519	1,176,266	518,259	157,231	854,082	34,036	1,018,286	245,984	3,297,928	846,237
1978	1,811,849	1,195,548	522,989	158,570	861,883	34,230	1,027,790	247,373	3,328,543	854,288
1979	1,827,487	1,219,886	527,057	159,720	868,591	34,501	1,035,959	249,374	3,350,749	860,073
1980	1,846,803	1,268,491	531,437	160,885	875,814	34,823	1,044,900	251,774	3,372,289	865,863
1981	1,944,843	1,360,490	553,620	166,806	912,399	36,525	1,090,143	264,415	3,479,036	894,539
1982	1,937,653	1,392,177	551,367	166,394	908,684	36,409	1,085,217	263,530	3,472,417	892,511
1983	2,016,690	1,436,386	566,473	170,383	933,596	37,739	1,116,243	273,505	3,544,146	912,111
1984	2,121,778	1,463,862	586,616	176,277	966,816	39,507	1,157,129	286,746	3,652,434	941,742
1985	2,200,005	1,479,230	601,951	180,665	992,106	40,912	1,188,364	296,460	3,731,803	963,472
1986	2,246,415	1,487,417	613,169	183,895	1,010,607	41,591	1,211,168	302,028	3,789,148	979,151
1987	2,290,445	1,492,978	624,732	186,935	1,029,676	42,065	1,234,938	306,914	3,843,966	994,118
1988	2,309,320	1,499,146	633,735	189,318	1,044,524	42,381	1,253,400	309,227	3,886,471	1,005,682
1989	2,324,226	1,508,790	637,442	190,579	1,050,637	42,579	1,260,651	310,791	3,910,215	1,011,971
1990	2,381,250	1,532,649	654,982	195,838	1,079,564	43,496	1,295,917	317,637	3,985,506	1,032,323
1991	2,414,040	1,551,570	670,906	200,640	1,105,825	43,846	1,327,970	320,924	4,056,348	1,051,511
1992	2,459,940	1,580,068	701,512	212,019	1,156,301	44,672	1,387,840	326,906	4,261,547	1,107,526
1993	2,495,923	1,606,427	718,591	222,525	1,184,469	45,304	1,417,327	331,544	4,460,359	1,161,574
1994	2,510,459	1,622,777	722,806	226,515	1,191,420	45,551	1,423,391	333,383	4,582,755	1,194,761
1995	2,513,206	1,626,099	723,961	228,253	1,193,324	45,597	1,424,466	333,730	4,630,307	1,207,689
1996	2,513,371	1,626,204	724,115	228,537	1,193,579	45,600	1,424,562	333,752	4,635,354	1,209,071
1997	2,513,436	1,626,256	724,130	228,542	1,193,604	45,601	1,424,592	333,760	4,635,439	1,209,094
1998	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
1999	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2000	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2001	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2002	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2003	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2004	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2005	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2006	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2007	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2008	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2009	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2010	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2011	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2012	2,513,437	1,626,264	724,130	228,542	1,193,604	45,601	1,424,593	333,760	4,635,440	1,209,094
2013	2,479,499	1,626,264	724,130	228,542	1,179,990	45,601	1,424,593	333,760	4,582,745	1,195,748
2014	2,449,469	1,598,325	709,440	224,092	1,170,019	44,437	1,395,636	325,407	4,551,155	1,187,434
2015	2,392,821	1,572,347	698,597	221,222	1,152,137	43,482	1,373,398	318,275	4,498,043	1,173,141
2016	2,294,053	1,523,300	678,641	215,851	1,119,225	41,784	1,332,661	305,615	4,399,014	1,146,594
2017	2,089,054	1,411,958	636,575	204,678	1,049,850	38,195	1,246,497	278,839	4,194,881	1,091,599
2018	1,831,452	1,199,701	580,804	189,352	957,872	33,624	1,133,537	245,025	3,893,531	1,011,354
2019	1,524,781	992,702	510,885	170,295	842,562	28,068	991,808	204,445	3,480,313	901,463
2020	1,223,378	833,301	423,392	142,350	698,264	21,789	823,240	159,646	2,916,186	758,097
2021	962,855	663,632	317,236	106,357	523,188	16,282	622,793	121,508	2,202,069	579,146
2022	829,434	552,498	261,770	88,831	431,713	13,780	514,752	103,543	1,780,867	476,286
2023	779,046	537,836	244,597	84,065	403,391	12,789	480,145	96,589	1,641,565	440,157
2024	760,701	490,508	238,389	79,809	389,852	12,463	467,821	94,202	1,550,432	419,266
2025	737,332	475,970	222,973	75,972	367,726	12,041	440,964	91,141	1,466,710	397,219
2026	724,213	463,210	212,950	73,238	351,196	11,785	420,687	89,381	1,387,323	376,104
2027	711,918	449,998	205,871	71,311	339,522	11,565	406,307	87,776	1,337,512	362,882
2028	701,588	430,716	201,141	69,972	331,721	11,371	396,803	86,387	1,306,897	354,806
2029	685,950	406,378	197,074	68,822	325,013	11,100	388,634	84,386	1,284,691	349,021
2030	666,634	357,773	192,694	67,657	317,790	10,778	379,692	81,987	1,263,151	343,231
2031	568,594	265,774	170,510	61,736	281,205	9,076	334,450	69,345	1,156,404	314,555
2032	575,784	234,088	172,763	62,148	284,920	9,192	339,375	70,230	1,163,023	316,583
2033	496,746	189,879	157,657	58,159	260,008	7,862	308,350	60,256	1,091,234	296,983
2034	391,659	162,403	137,514	52,265	226,788	6,094	267,464	47,015	983,006	267,352
2035	313,432	147,035	122,179	47,877	201,498	4,689	236,226	37,300	903,637	245,622
TOTAL	124,482,636	80,558,421	35,667,024	11,178,191	58,791,124	2,261,123	70,220,746	16,543,484	226,824,129	59,110,673

Note: As of January 1, 1992, Castaic Lake Water Agency will assume all rights and obligations granted to Devil's Den Water District according to its long-term water supply contract with the state of California.



TABLE B-15

## Capital Cost Component of Transportation Charge for Each Contractor (Continued)

(in dollars)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Geronio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	703,634	0	790,266	0	0	0	0	43,889	1,421,169
1964	22,138	1,282,655	9,546	1,621,621	0	0	0	0	71,246	2,563,348
1965	22,243	2,217,785	18,072	2,749,101	0	0	411	411	101,788	4,315,912
1966	38,604	3,965,502	33,988	4,915,820	0	0	574	574	119,009	6,841,343
1967	72,468	7,821,098	69,285	9,655,190	0	0	571	571	159,577	12,019,694
1968	122,078	14,581,365	135,494	17,697,150	0	0	574	574	236,157	21,184,737
1969	190,139	22,216,582	205,928	26,899,791	0	0	3,243	3,243	301,078	31,384,554
1970	279,529	29,468,458	262,093	35,944,902	0	0	15,368	15,368	321,689	40,706,032
1971	391,344	37,853,250	321,497	46,385,490	0	0	16,208	16,208	325,521	51,563,469
1972	455,405	44,784,538	359,741	54,480,675	0	0	17,616	17,616	326,166	60,842,888
1973	477,896	47,058,463	363,203	57,113,848	0	0	17,617	17,617	326,848	63,482,701
1974	491,185	49,114,660	378,215	59,417,082	0	0	17,618	17,618	327,267	66,301,063
1975	504,868	50,092,811	382,686	60,626,783	0	0	17,620	17,620	328,746	68,182,023
1976	518,008	50,958,964	387,032	61,688,383	0	0	17,621	17,621	329,172	69,644,835
1977	526,230	51,660,123	391,413	62,527,594	0	0	17,624	17,624	330,025	70,830,354
1978	531,226	52,270,786	397,170	63,242,245	0	0	17,625	17,625	331,122	72,050,678
1979	534,806	53,087,700	406,222	64,162,125	0	0	17,627	17,627	332,617	73,497,668
1980	538,376	54,521,270	423,995	65,736,720	0	0	17,628	17,628	333,997	75,565,056
1981	556,049	57,606,818	457,206	69,322,889	0	0	17,630	17,630	337,060	79,766,706
1982	554,824	58,423,646	468,838	70,153,667	0	0	17,632	17,632	336,710	81,076,501
1983	566,878	60,001,126	485,074	72,060,350	0	0	17,632	17,632	337,425	83,199,306
1984	585,104	61,302,201	494,953	73,775,165	0	0	17,633	17,633	341,072	85,712,768
1985	598,463	62,144,644	500,313	74,918,388	0	0	17,634	17,634	345,380	87,547,277
1986	608,101	62,671,491	503,214	75,647,395	0	0	17,636	17,636	346,191	89,714,760
1987	617,305	63,110,695	505,058	76,279,825	0	0	17,638	17,638	347,039	92,286,944
1988	624,419	63,498,230	507,160	76,803,013	0	0	17,639	17,639	348,602	94,431,176
1989	628,306	63,865,272	510,332	77,251,791	0	0	17,641	17,641	351,273	95,688,987
1990	640,769	64,880,445	518,713	78,559,089	0	0	17,644	17,644	353,763	97,627,818
1991	652,522	65,733,303	525,036	79,654,441	0	0	17,646	17,646	358,373	98,966,534
1992	686,970	67,583,336	534,040	82,042,677	0	0	17,646	17,646	364,647	101,730,426
1993	720,264	69,304,129	542,265	84,210,701	0	0	17,646	17,646	371,167	105,329,745
1994	740,878	70,374,558	547,958	85,517,212	0	0	17,646	17,646	379,671	111,299,844
1995	748,893	70,713,701	549,135	85,938,361	0	0	17,646	17,646	382,871	117,438,967
1996	749,743	70,743,468	549,167	85,976,523	0	0	17,646	17,646	382,981	121,560,151
1997	749,757	70,745,300	549,183	85,978,694	0	0	17,646	17,646	383,079	122,088,175
1998	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
1999	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2000	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2001	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2002	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2003	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2004	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2005	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2006	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2007	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2008	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2009	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2010	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2011	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2012	749,757	70,745,572	549,185	85,978,979	0	0	17,646	17,646	383,126	122,098,541
2013	741,453	70,041,938	549,185	85,153,448	0	0	17,646	17,646	339,237	120,636,233
2014	736,315	69,462,916	539,639	84,394,284	0	0	17,646	17,646	311,881	119,549,883
2015	727,514	68,527,787	531,114	83,229,878	0	0	17,235	17,235	281,338	117,755,076
2016	711,153	66,780,070	515,198	81,063,159	0	0	17,073	17,073	264,118	115,227,094
2017	677,290	62,924,474	479,900	76,323,790	0	0	17,075	17,075	223,549	110,044,765
2018	627,679	56,164,207	413,691	68,281,829	0	0	17,073	17,073	146,969	101,444,489
2019	559,619	48,528,990	343,257	59,079,188	0	0	14,403	14,403	82,048	91,870,626
2020	470,229	41,277,114	287,092	50,034,078	0	0	2,278	2,278	61,437	82,678,715
2021	358,414	32,892,322	227,688	39,593,490	0	0	1,438	1,438	57,605	72,190,492
2022	294,353	25,961,034	189,444	31,498,305	0	0	30	30	56,960	64,071,918
2023	271,861	23,687,108	185,982	28,865,131	0	0	30	30	56,278	61,393,908
2024	258,573	21,630,912	170,970	26,561,898	0	0	28	28	55,859	59,078,540
2025	244,889	20,652,761	166,500	25,352,218	0	0	26	26	54,380	57,844,930
2026	231,750	19,786,607	162,153	24,290,597	0	0	25	25	53,954	56,454,833
2027	223,527	19,085,449	157,772	23,451,385	0	0	22	22	53,101	55,585,988
2028	218,531	18,474,785	152,016	22,736,734	0	0	21	21	52,004	54,827,248
2029	214,952	17,657,872	142,964	21,816,857	0	0	19	19	50,510	53,871,884
2030	211,382	16,224,302	125,190	20,242,261	0	0	18	18	49,129	52,249,873
2031	193,708	13,138,753	91,980	16,656,090	0	0	16	16	46,067	48,549,626
2032	194,933	12,321,925	80,348	15,825,312	0	0	15	15	46,417	47,706,937
2033	182,880	10,744,446	64,111	13,918,631	0	0	14	14	45,701	45,726,523
2034	164,653	9,443,371	54,233	12,203,817	0	0	13	13	42,054	43,826,435
2035	151,294	8,600,928	48,873	11,060,592	0	0	12	12	37,746	42,357,443
TOTAL	36,659,095	3,491,555,658	27,210,300	4,241,062,604	0	0	882,272	882,272	18,928,450	5,964,285,183

TABLE B-16A

## Minimum OMP&amp;R Component of Transportation Charge for Each Contractor

(in dollars)

Sheet 1 of 4

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County WA	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	9,699	8,868	0	18,567	0	0	0
1963	0	0	0	38,048	34,788	82,896	155,732	0	0	0
1964	0	0	0	41,148	38,323	91,320	170,791	0	0	0
1965	0	0	0	78,529	75,616	195,792	349,937	0	0	0
1966	0	0	0	79,753	78,779	218,544	377,076	0	0	0
1967	0	0	0	127,896	123,665	335,225	586,786	0	0	0
1968	130	0	130	126,058	120,563	333,506	580,127	11,801	21,769	33,570
1969	80,875	0	80,875	145,410	138,051	372,584	656,045	63,112	116,434	179,546
1970	94,872	0	94,872	128,993	120,246	320,663	569,902	74,187	136,867	211,054
1971	45,579	0	45,579	113,071	108,346	296,004	517,421	74,021	136,560	210,581
1972	37,895	0	37,895	122,407	117,483	334,366	574,256	79,223	146,158	225,381
1973	32,993	0	32,993	122,736	116,785	325,727	565,250	75,774	139,796	215,570
1974	46,498	0	46,498	154,434	146,929	403,081	704,444	76,701	141,504	218,205
1975	37,707	0	37,707	189,176	182,087	513,823	885,086	92,605	170,845	263,450
1976	60,786	0	60,786	203,063	193,436	524,814	921,313	95,010	175,285	270,295
1977	78,400	0	78,400	179,911	169,103	500,192	849,206	103,009	190,040	293,049
1978	56,318	0	56,318	239,301	228,854	647,829	1,115,984	104,216	192,269	296,485
1979	73,852	0	73,852	236,986	232,103	666,744	1,135,833	100,991	186,320	287,311
1980	81,770	0	81,770	389,583	372,191	1,010,846	1,772,620	124,857	230,348	355,205
1981	100,783	0	100,783	316,560	301,503	832,351	1,450,414	137,357	253,408	390,765
1982	222,133	0	222,133	394,384	376,860	1,119,081	1,890,325	142,218	262,377	404,595
1983	82,474	0	82,474	446,846	440,392	1,316,172	2,203,410	170,483	314,522	485,005
1984	112,862	0	112,862	593,017	567,344	1,821,465	2,981,826	201,571	371,869	573,440
1985	212,723	0	212,723	692,118	673,437	1,888,735	3,254,290	250,698	462,506	713,204
1986	204,411	0	204,411	625,929	600,685	1,834,493	3,061,107	234,716	433,022	667,738
1987	295,777	0	295,777	698,347	662,482	2,025,074	3,385,903	237,167	476,127	713,294
1988	316,599	0	316,599	676,032	654,254	1,908,896	3,239,182	260,105	563,382	823,487
1989	450,221	720,238	1,170,459	708,624	699,913	1,897,840	3,306,377	246,413	671,066	917,479
1990	632,474	599,564	1,232,038	772,978	765,236	2,115,388	3,653,602	301,757	656,521	958,278
1991	529,810	935,562	1,465,372	992,705	975,353	2,610,533	4,578,591	407,015	838,813	1,245,828
1992	674,866	1,151,358	1,826,224	1,121,089	1,088,114	2,965,265	5,174,468	473,400	1,108,207	1,581,607
1993	697,165	1,170,018	1,867,183	1,099,822	1,071,004	2,946,090	5,116,916	450,162	830,336	1,280,498
1994	623,296	1,086,099	1,709,395	1,062,212	1,034,703	2,810,019	4,906,934	418,720	772,409	1,191,129
1995	620,902	1,079,299	1,700,201	1,061,509	1,034,501	2,805,555	4,901,565	446,137	823,068	1,269,205
1996	623,487	1,084,165	1,707,652	1,065,989	1,038,834	2,817,274	4,922,097	1,630,190	3,362,054	4,992,244
1997	624,772	1,086,799	1,711,571	1,067,444	1,040,236	2,820,977	4,928,657	1,604,673	3,306,335	4,911,008
1998	624,853	1,086,972	1,711,825	1,067,380	1,040,183	2,820,841	4,928,404	1,603,899	3,304,942	4,908,841
1999	624,796	1,086,840	1,711,636	1,067,329	1,040,136	2,820,729	4,928,194	1,603,810	3,304,756	4,908,566
2000	625,254	1,087,874	1,713,128	1,067,732	1,040,508	2,821,639	4,929,879	1,604,521	3,306,279	4,910,800
2001	625,277	1,087,922	1,713,199	1,067,748	1,040,524	2,821,680	4,929,952	1,604,553	3,306,346	4,910,899
2002	625,368	1,088,130	1,713,498	1,067,827	1,040,598	2,821,865	4,930,290	1,604,695	3,306,650	4,911,345
2003	625,497	1,088,420	1,713,917	1,067,939	1,040,701	2,822,117	4,930,757	1,604,894	3,307,075	4,911,969
2004	625,748	1,088,987	1,714,735	1,068,158	1,040,904	2,822,618	4,931,880	1,605,284	3,307,908	4,913,192
2005	626,447	1,090,569	1,717,016	1,068,772	1,041,473	2,824,015	4,934,260	1,606,375	3,310,244	4,916,619
2006	626,431	1,090,531	1,716,962	1,068,754	1,041,457	2,823,977	4,934,188	1,606,345	3,310,179	4,916,524
2007	626,478	1,090,641	1,717,119	1,068,798	1,041,497	2,824,075	4,934,370	1,606,423	3,310,346	4,916,769
2008	626,562	1,090,825	1,717,387	1,068,868	1,041,563	2,824,237	4,934,668	1,606,549	3,310,612	4,917,161
2009	626,663	1,091,053	1,717,716	1,068,956	1,041,643	2,824,435	4,935,034	1,606,705	3,310,943	4,917,648
2010	626,796	1,091,354	1,718,150	1,069,073	1,041,753	2,824,702	4,935,528	1,606,912	3,311,392	4,918,304
2011	626,824	1,091,419	1,718,243	1,069,097	1,041,774	2,824,757	4,935,628	1,606,951	3,311,479	4,918,430
2012	626,876	1,091,536	1,718,412	1,069,143	1,041,817	2,824,862	4,935,822	1,607,036	3,311,653	4,918,689
2013	627,373	1,092,658	1,720,031	1,069,575	1,042,217	2,825,843	4,937,635	1,607,805	3,313,298	4,921,103
2014	627,551	1,093,060	1,720,611	1,069,733	1,042,363	2,826,206	4,938,302	1,608,087	3,313,903	4,921,990
2015	627,541	1,093,041	1,720,582	1,069,726	1,042,357	2,826,190	4,938,273	1,608,074	3,313,874	4,921,948
2016	627,537	1,093,027	1,720,564	1,069,721	1,042,352	2,826,178	4,938,251	1,608,066	3,313,855	4,921,921
2017	627,928	1,093,914	1,721,842	1,070,062	1,042,669	2,826,957	4,939,688	1,608,673	3,315,155	4,923,828
2018	627,901	1,093,851	1,721,752	1,070,038	1,042,645	2,826,898	4,939,581	1,608,628	3,315,059	4,923,687
2019	627,909	1,093,868	1,721,777	1,070,043	1,042,651	2,826,914	4,939,608	1,608,638	3,315,079	4,923,717
2020	627,737	1,093,475	1,721,212	1,069,891	1,042,511	2,826,570	4,938,972	1,608,372	3,314,507	4,922,879
2021	627,745	1,093,493	1,721,238	1,069,898	1,042,515	2,826,577	4,938,990	1,608,378	3,314,525	4,922,903
2022	627,730	1,093,460	1,721,190	1,069,881	1,042,500	2,826,542	4,938,923	1,608,347	3,314,462	4,922,809
2023	627,745	1,093,494	1,721,239	1,069,893	1,042,512	2,826,574	4,938,979	1,608,371	3,314,508	4,922,879
2024	627,708	1,093,411	1,721,119	1,069,862	1,042,484	2,826,500	4,938,846	1,608,312	3,314,389	4,922,701
2025	627,737	1,093,474	1,721,211	1,069,883	1,042,504	2,826,549	4,938,936	1,608,350	3,314,466	4,922,816
2026	627,739	1,093,479	1,721,218	1,069,885	1,042,505	2,826,553	4,938,943	1,608,352	3,314,473	4,922,825
2027	627,725	1,093,447	1,721,172	1,069,874	1,042,495	2,826,527	4,938,896	1,608,334	3,314,431	4,922,765
2028	627,745	1,093,493	1,721,238	1,069,890	1,042,509	2,826,565	4,938,964	1,608,362	3,314,494	4,922,856
2029	627,727	1,093,451	1,721,178	1,069,875	1,042,496	2,826,529	4,938,900	1,608,336	3,314,436	4,922,772
2030	627,749	1,093,503	1,721,252	1,069,893	1,042,513	2,826,572	4,938,978	1,608,367	3,314,508	4,922,875
2031	627,739	1,093,462	1,721,221	1,069,886	1,042,506	2,826,556	4,938,948	1,608,356	3,314,479	4,922,835
2032	627,727	1,093,452	1,721,179	1,069,875	1,042,496	2,826,531	4,938,902	1,608,336	3,314,438	4,922,774
2033	627,756	1,093,517	1,721,273	1,069,897	1,042,516	2,826,587	4,939,000	1,608,376	3,314,526	4,922,902
2034	627,734	1,093,468	1,721,202	1,069,882	1,042,502	2,826,542	4,938,926	1,608,345	3,314,457	4,922,802
2035	627,680	1,093,343	1,721,023	1,069,833	1,042,456	2,826,432	4,938,721	1,608,263	3,314,277	4,922,540
TOTAL	31,579,763	50,405,036	81,984,799	56,754,379	55,224,872	151,065,605	263,044,856	69,764,769	143,352,620	213,117,389

TABLE B-16A

## Minimum OMP&amp;R Component of Transportation Charge for Each Contractor (Continued)

(in dollars)											Sheet 2 of 4
Calendar  Year	SAN JOAQUIN VALLEY AREA										
	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Basin Water Storage District	Total		
				Municipal and Industrial	Agricultural						
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]		
1961	0	0	0	0	0	0	0	0	0	0	
1962	0	0	0	0	0	0	0	0	0	0	
1963	0	0	0	0	0	0	0	0	0	0	
1964	0	0	0	0	0	0	0	0	0	0	
1965	0	0	0	0	0	0	0	0	0	0	
1966	0	0	0	0	0	0	0	0	0	0	
1967	0	0	0	0	0	0	0	0	0	0	
1968	37,806	1,963	5,639	60,702	678,085	2,007	2,073	77,592	865,867		
1969	45,479	2,237	30,159	80,553	1,197,126	2,286	2,086	90,772	1,450,698		
1970	46,969	2,292	35,450	96,672	1,381,493	2,345	2,158	93,407	1,660,786		
1971	47,997	2,315	35,370	106,654	1,643,120	2,366	2,288	94,874	1,934,984		
1972	49,867	2,414	37,858	122,312	1,729,058	2,470	2,254	98,776	2,045,009		
1973	50,005	2,386	36,208	125,553	1,719,630	2,439	2,310	98,329	2,036,860		
1974	52,816	2,557	36,652	135,661	1,822,379	2,615	2,529	104,610	2,159,819		
1975	66,962	3,242	44,250	162,739	2,235,242	3,317	3,191	132,663	2,651,606		
1976	66,504	3,327	45,401	159,304	2,215,686	3,404	2,919	133,940	2,630,485		
1977	75,670	3,814	49,222	189,781	2,523,460	3,904	3,716	152,989	3,002,556		
1978	70,688	3,504	49,800	174,899	2,426,534	3,583	3,644	141,673	2,874,325		
1979	68,878	3,437	48,259	173,678	2,377,329	3,514	3,492	138,493	2,817,080		
1980	95,903	4,724	59,663	235,749	3,145,779	4,830	4,778	191,591	3,743,017		
1981	118,559	5,972	65,635	266,091	3,431,671	6,106	5,189	239,573	4,138,796		
1982	135,683	6,791	67,959	315,515	3,893,766	6,943	6,455	273,278	4,706,390		
1983	186,028	9,297	81,464	428,968	5,061,467	9,506	8,548	374,428	6,159,706		
1984	199,500	9,930	96,317	478,613	5,718,258	10,154	9,323	400,692	6,922,787		
1985	225,609	11,199	119,796	538,215	6,584,169	11,453	10,941	452,557	7,953,939		
1986	217,971	10,845	112,159	549,524	6,579,995	11,094	11,337	437,745	7,930,670		
1987	224,572	11,197	113,331	577,354	6,836,004	11,454	11,956	451,488	8,237,356		
1988	218,499	10,965	124,291	543,580	6,676,921	11,216	11,003	440,712	8,037,187		
1989	220,378	11,060	117,748	558,542	6,698,865	11,313	11,003	444,493	8,073,402		
1990	274,064	13,807	144,196	663,379	8,079,712	14,120	13,764	553,840	9,756,881		
1991	291,838	14,508	193,004	722,976	9,353,716	14,837	15,859	585,793	11,192,531		
1992	327,710	16,263	223,238	812,909	10,558,969	16,633	17,359	657,230	12,630,311		
1993	332,882	16,461	212,137	835,672	10,613,413	16,838	18,005	666,436	12,711,844		
1994	325,770	16,074	198,597	812,939	10,251,521	16,438	17,840	651,448	12,290,627		
1995	328,160	16,191	213,186	818,647	10,214,969	16,561	17,917	656,221	12,281,852		
1996	329,836	16,274	214,151	822,465	10,263,369	16,647	17,988	659,586	12,340,316		
1997	330,693	16,316	214,574	824,496	10,287,978	16,687	18,017	661,293	12,370,054		
1998	330,762	16,319	214,605	824,661	10,289,934	16,691	18,019	661,431	12,372,422		
1999	330,724	16,317	214,590	824,573	10,288,867	16,689	18,017	661,356	12,371,133		
2000	331,046	16,334	214,728	825,353	10,298,053	16,706	18,028	661,993	12,382,241		
2001	331,056	16,334	214,735	825,378	10,298,374	16,706	18,028	662,014	12,382,625		
2002	331,124	16,335	214,763	825,538	10,300,265	16,709	18,030	662,145	12,384,909		
2003	331,208	16,342	214,802	825,749	10,302,755	16,714	18,033	662,318	12,387,921		
2004	331,384	16,351	214,880	826,175	10,307,803	16,723	18,038	662,667	12,394,021		
2005	331,877	16,375	215,096	827,376	10,321,955	16,747	18,052	663,646	12,411,124		
2006	331,859	16,374	215,089	827,332	10,321,446	16,747	18,052	663,608	12,410,507		
2007	331,899	16,375	215,106	827,428	10,322,556	16,748	18,053	663,689	12,411,854		
2008	331,954	16,377	215,131	827,559	10,324,107	16,751	18,055	663,795	12,413,729		
2009	332,020	16,382	215,160	827,720	10,326,038	16,756	18,056	663,927	12,416,059		
2010	332,116	16,384	215,203	827,956	10,328,801	16,760	18,060	664,122	12,419,402		
2011	332,134	16,386	215,212	827,999	10,329,303	16,761	18,060	664,157	12,420,012		
2012	332,174	16,388	215,225	828,092	10,330,392	16,762	18,061	664,230	12,421,324		
2013	332,512	16,406	215,379	828,918	10,340,172	16,780	18,071	664,906	12,433,144		
2014	332,647	16,411	215,435	829,245	10,343,995	16,786	18,075	665,171	12,437,765		
2015	332,643	16,411	215,433	829,235	10,343,855	16,785	18,075	665,163	12,437,600		
2016	332,637	16,410	215,431	829,226	10,343,753	16,785	18,074	665,155	12,437,471		
2017	332,909	16,424	215,551	829,878	10,351,461	16,798	18,083	665,688	12,446,792		
2018	332,886	16,424	215,543	829,828	10,350,883	16,798	18,082	665,649	12,446,093		
2019	332,891	16,424	215,545	829,836	10,351,003	16,798	18,082	665,658	12,446,237		
2020	332,770	16,416	215,492	829,545	10,347,558	16,791	18,079	665,420	12,442,071		
2021	332,768	16,415	215,492	829,540	10,347,515	16,790	18,079	665,416	12,442,015		
2022	332,749	16,415	215,484	829,493	10,346,971	16,789	18,078	665,376	12,441,355		
2023	332,760	16,415	215,488	829,516	10,347,240	16,789	18,078	665,398	12,441,684		
2024	332,735	16,415	215,478	829,454	10,346,539	16,789	18,078	665,350	12,440,838		
2025	332,742	16,415	215,485	829,470	10,346,771	16,788	18,078	665,365	12,441,114		
2026	332,743	16,415	215,485	829,473	10,346,796	16,788	18,078	665,366	12,441,144		
2027	332,736	16,415	215,481	829,458	10,346,580	16,788	18,078	665,353	12,440,889		
2028	332,749	16,415	215,487	829,484	10,346,918	16,789	18,078	665,376	12,441,296		
2029	332,735	16,415	215,482	829,457	10,346,588	16,788	18,078	665,352	12,440,895		
2030	332,750	16,415	215,488	829,489	10,346,985	16,789	18,078	665,380	12,441,374		
2031	332,747	16,415	215,488	829,477	10,346,847	16,789	18,078	665,372	12,441,211		
2032	332,736	16,415	215,482	829,461	10,346,618	16,788	18,078	665,355	12,440,933		
2033	332,751	16,415	215,489	829,493	10,347,046	16,790	18,078	665,383	12,441,445		
2034	332,740	16,415	215,484	829,467	10,346,698	16,788	18,078	665,359	12,441,029		
2035	332,704	16,415	215,466	829,377	10,345,630	16,788	18,077	665,285	12,439,742		
TOTAL	17,689,673	874,286	11,206,104	43,870,851	548,864,755	894,201	946,375	35,404,916	659,751,161		

TABLE B-16A

## Minimum OMP&amp;R Component of Transportation Charge for Each Contractor (Continued)

(in dollars)

Sheet 3 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	65,073	28,084	11,697	2,958	18,290	1,088	24,380	8,171	52,314	14,399
1969	86,340	70,345	15,522	3,924	25,595	1,444	32,346	10,843	69,418	19,106
1970	107,806	84,580	19,391	4,902	31,979	1,802	40,392	13,540	86,726	23,866
1971	178,822	105,985	32,230	8,152	53,149	2,991	66,998	22,459	144,137	39,636
1972	363,554	202,648	106,741	30,966	176,039	6,603	213,029	48,104	548,122	144,113
1973	404,662	222,809	121,341	34,673	200,118	7,347	243,320	53,976	724,532	190,155
1974	434,864	235,645	130,629	37,060	215,431	7,678	262,736	56,382	786,108	207,020
1975	504,790	289,504	151,033	43,179	249,085	9,082	303,109	65,579	905,424	238,842
1976	559,011	262,472	160,688	44,454	265,002	10,030	325,512	73,253	964,525	256,572
1977	675,631	335,834	184,833	47,750	304,832	11,888	381,208	87,370	1,069,549	289,821
1978	600,343	377,059	187,027	54,153	308,449	10,711	373,191	78,304	1,148,279	300,751
1979	661,123	349,242	196,264	52,212	323,679	12,125	401,467	87,126	1,125,451	302,509
1980	858,071	415,743	253,097	71,923	417,412	15,433	508,394	112,859	1,518,448	401,234
1981	996,317	505,019	283,196	73,695	467,047	17,919	583,084	131,151	1,550,572	420,060
1982	1,140,249	564,374	324,474	90,546	535,124	20,408	656,354	149,554	1,891,139	503,343
1983	1,751,411	820,910	452,134	119,882	745,660	30,762	926,215	226,675	2,386,185	643,066
1984	2,085,361	935,421	543,782	148,775	896,807	36,466	1,102,179	268,602	2,992,978	796,701
1985	2,255,731	1,025,526	604,465	162,831	996,881	40,603	1,232,356	289,488	3,317,956	884,860
1986	2,301,512	1,100,059	616,079	162,047	1,018,037	39,878	1,263,389	294,687	3,306,226	889,698
1987	2,424,593	1,066,028	631,774	168,114	1,041,918	42,721	1,291,403	314,987	3,414,639	917,821
1988	2,334,154	1,052,970	652,604	174,742	1,076,267	41,119	1,331,997	302,429	3,555,180	954,802
1989	2,285,910	1,088,609	612,985	169,120	1,010,937	39,599	1,241,206	293,400	3,469,587	924,381
1990	2,526,434	1,204,278	659,905	182,732	1,088,313	43,269	1,335,576	320,750	3,724,177	990,199
1991	2,994,905	1,361,775	776,409	213,024	1,280,452	53,255	1,577,390	390,041	4,385,278	1,173,664
1992	3,264,424	1,901,580	912,956	265,476	1,505,662	58,434	1,823,829	427,807	5,622,289	1,480,689
1993	3,333,025	1,777,435	934,923	256,921	1,514,872	59,708	1,899,353	437,336	5,524,601	1,477,791
1994	3,229,660	1,811,164	918,283	258,413	1,544,442	57,888	1,851,770	423,825	5,531,333	1,468,662
1995	3,231,807	1,868,455	918,772	255,666	1,515,244	57,963	1,857,585	424,301	5,485,065	1,459,385
1996	3,244,347	1,791,610	920,911	254,359	1,518,771	58,201	1,865,579	426,016	5,465,218	1,456,618
1997	3,252,618	1,939,745	907,666	235,039	1,496,912	58,384	1,872,303	427,261	5,122,988	1,391,117
1998	3,253,266	1,820,565	955,113	292,743	1,575,197	58,396	1,872,849	427,359	6,148,634	1,591,309
1999	3,252,821	1,832,088	893,905	218,169	1,474,210	58,390	1,872,437	427,288	4,823,190	1,332,655
2000	3,256,524	1,826,203	938,764	271,398	1,548,223	58,473	1,875,803	427,874	5,769,413	1,517,870
2001	3,256,681	1,832,483	942,220	275,547	1,553,924	58,477	1,875,952	427,899	5,843,213	1,532,292
2002	3,257,437	1,820,593	924,086	253,077	1,524,006	58,492	1,876,636	428,018	5,443,917	1,454,517
2003	3,258,477	1,831,547	911,462	237,211	1,503,175	58,518	1,877,592	428,181	5,161,996	1,399,695
2004	3,260,500	1,835,031	935,305	265,485	1,542,516	58,562	1,879,425	428,501	5,664,556	1,498,074
2005	3,266,211	1,841,181	939,376	268,033	1,549,230	58,696	1,884,613	429,405	5,710,346	1,507,953
2006	3,266,042	1,847,320	939,614	268,389	1,549,617	58,691	1,884,472	429,376	5,716,595	1,509,149
2007	3,266,457	1,823,918	935,133	262,744	1,542,231	58,700	1,884,834	429,442	5,616,347	1,489,658
2008	3,267,106	1,841,938	929,147	255,155	1,532,349	58,718	1,885,432	429,546	5,481,457	1,463,448
2009	3,267,912	1,835,814	934,938	261,891	1,541,908	58,735	1,886,169	429,670	5,601,194	1,486,948
2010	3,269,003	1,835,133	939,227	266,665	1,548,986	58,760	1,887,158	429,844	5,686,172	1,503,702
2011	3,269,226	1,840,008	943,788	272,136	1,556,501	58,764	1,887,367	429,877	5,783,400	1,522,709
2012	3,269,654	1,837,745	938,219	265,150	1,547,312	58,779	1,887,754	429,945	5,659,310	1,498,572
2013	3,273,666	1,840,037	918,177	238,966	1,514,251	58,869	1,891,413	430,577	5,194,231	1,408,510
2014	3,275,140	1,843,138	949,649	276,789	1,566,173	58,902	1,892,734	430,808	5,866,486	1,539,903
2015	3,275,080	1,846,340	945,396	271,617	1,559,152	58,902	1,892,680	430,799	5,774,570	1,521,961
2016	3,275,057	1,843,438	919,568	240,078	1,516,548	58,902	1,892,672	430,797	5,214,074	1,412,608
2017	3,278,150	1,851,628	936,409	259,345	1,544,330	58,972	1,895,462	431,286	5,556,710	1,479,965
2018	3,277,918	1,843,652	938,220	261,653	1,547,317	58,966	1,895,257	431,250	5,597,697	1,487,926
2019	3,277,974	1,844,125	938,607	262,106	1,547,954	58,966	1,895,304	431,259	5,605,713	1,489,495
2020	3,276,599	1,844,971	938,754	262,862	1,548,201	58,936	1,894,066	431,042	5,619,076	1,491,877
2021	3,276,558	1,846,652	946,353	272,164	1,560,736	58,935	1,894,021	431,034	5,784,411	1,524,123
2022	3,276,335	1,845,661	931,839	254,535	1,536,794	58,929	1,893,813	430,999	5,471,092	1,462,961
2023	3,276,381	1,847,563	940,888	265,576	1,551,716	58,929	1,893,839	431,003	5,667,304	1,501,245
2024	3,276,028	1,834,881	947,142	273,377	1,562,044	58,924	1,893,497	430,944	5,805,972	1,528,236
2025	3,276,137	1,855,836	933,883	257,134	1,540,165	58,925	1,893,596	430,961	5,517,269	1,471,934
2026	3,276,155	1,846,001	939,163	263,577	1,548,879	58,925	1,893,611	430,963	5,631,803	1,494,280
2027	3,276,053	1,837,342	940,242	264,938	1,550,660	58,923	1,893,515	430,949	5,656,007	1,498,985
2028	3,276,200	1,853,016	940,509	265,202	1,551,098	58,925	1,893,653	430,971	5,660,704	1,499,926
2029	3,276,063	1,836,233	936,205	260,002	1,543,998	58,923	1,893,524	430,950	5,568,297	1,481,876
2030	3,276,228	1,853,034	940,273	264,900	1,550,709	58,926	1,893,680	430,974	5,655,311	1,498,882
2031	3,276,167	1,845,001	941,089	265,900	1,552,023	58,925	1,893,618	430,965	5,673,107	1,502,343
2032	3,276,066	1,841,089	936,429	260,274	1,544,368	58,924	1,893,528	430,951	5,573,136	1,482,819
2033	3,276,264	1,847,893	935,808	259,432	1,543,341	58,927	1,893,715	430,983	5,558,110	1,479,925
2034	3,276,102	1,842,636	942,906	268,169	1,555,052	58,924	1,893,560	430,957	5,713,441	1,510,197
2035	3,275,692	1,603,614	968,177	299,205	1,596,742	58,916	1,893,197	430,893	6,264,985	1,617,734
TOTAL	172,441,878	94,490,256	48,847,774	13,629,282	80,560,042	3,089,245	98,660,078	22,610,815	289,627,690	76,957,143

Note: As of January 1, 1992, Castaic Lake Water Agency will assume all rights and obligations granted to Devil's Den Water District according to its long-term water supply contract with the state of California.

TABLE B-16A  
Minimum OMP&R Component of Transportation Charge for Each Contractor (Continued)

Calendar Year	(in dollars)				Sheet 4 of 4					
	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Geronimo Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	18,567
1963	0	0	0	0	0	0	0	0	12,626	168,358
1964	0	0	0	0	0	0	0	0	13,938	184,729
1965	0	0	0	0	0	0	0	0	27,919	377,856
1966	0	0	0	0	0	0	0	0	29,323	406,399
1967	0	0	0	0	0	0	0	0	45,379	632,165
1968	8,819	972,744	9,504	1,218,521	0	0	0	0	44,745	2,742,960
1969	11,708	1,295,613	12,610	1,654,812	0	0	0	0	51,060	4,073,038
1970	14,621	1,624,573	15,745	2,069,923	0	0	0	0	68,258	4,674,795
1971	24,302	2,716,582	26,120	3,421,563	0	0	54	54	53,391	6,183,573
1972	89,132	8,038,457	68,368	10,035,876	0	0	40	40	77,804	12,996,261
1973	117,781	9,890,314	78,312	12,289,340	0	0	1	1	53,161	15,193,175
1974	128,166	11,581,499	83,451	14,166,669	0	0	143	143	75,588	17,371,366
1975	147,900	13,584,540	101,892	16,593,959	0	0	1,069	1,069	80,581	20,513,458
1976	158,663	12,862,497	94,799	16,037,478	0	0	139	139	102,406	20,022,902
1977	178,791	16,205,614	121,985	19,895,106	0	0	892	892	96,815	24,216,024
1978	186,386	17,811,759	132,438	21,568,850	0	0	39	39	101,935	26,013,936
1979	186,685	16,414,295	126,757	20,238,935	0	0	3,235	3,235	117,761	24,674,007
1980	248,407	20,927,493	154,101	25,902,615	0	0	416	416	175,051	32,030,694
1981	259,063	23,520,180	184,684	28,991,967	0	0	3,847	3,847	180,293	35,256,865
1982	311,340	28,286,190	211,613	34,684,708	0	0	10,956	10,956	179,299	42,098,406
1983	396,626	38,560,204	322,449	47,382,179	0	0	(422)	(422)	221,102	56,533,454
1984	492,667	45,120,449	377,896	55,798,084	0	0	643	643	221,295	66,610,937
1985	546,536	49,153,366	409,317	60,919,916	0	0	2,599	2,599	341,468	73,398,139
1986	548,986	52,612,522	439,989	64,591,109	0	0	2,595	2,595	293,869	76,751,499
1987	566,710	51,781,940	424,409	64,087,057	0	0	2,595	2,595	342,158	77,064,140
1988	589,651	51,489,710	410,548	63,966,173	0	0	2,600	2,600	362,851	76,748,079
1989	571,757	52,559,119	430,435	64,697,045	0	0	2,672	2,672	405,871	78,573,305
1990	612,398	56,935,664	467,769	70,091,464	0	0	2,687	2,687	452,497	86,147,447
1991	725,252	64,010,852	504,241	79,446,538	0	0	2,730	2,730	481,966	98,413,556
1992	917,650	75,311,817	582,393	94,075,006	0	0	2,774	2,774	550,226	115,840,616
1993	913,407	74,764,843	553,078	93,474,292	0	0	2,912	2,912	547,931	115,001,576
1994	909,416	75,583,575	566,367	94,124,798	0	0	3,058	3,058	538,941	114,764,882
1995	903,493	76,780,449	578,840	95,337,025	0	0	3,058	3,058	543,163	116,036,069
1996	901,529	73,931,108	556,314	92,390,581	0	0	3,058	3,058	546,185	116,902,133
1997	858,436	78,140,790	599,960	96,303,219	0	0	3,058	3,058	547,228	120,774,795
1998	989,598	77,341,022	564,941	96,890,992	0	0	3,058	3,058	547,021	121,362,563
1999	820,117	73,683,255	568,321	91,256,846	0	0	3,058	3,058	546,961	115,726,394
2000	941,400	76,353,999	566,652	95,352,596	0	0	3,058	3,058	547,446	119,839,148
2001	950,849	76,894,261	568,503	96,012,301	0	0	3,058	3,058	547,466	120,499,500
2002	899,866	75,252,920	565,021	93,758,586	0	0	3,058	3,058	547,564	118,249,250
2003	863,917	74,717,698	568,257	92,817,726	0	0	3,058	3,058	547,696	117,313,044
2004	928,333	76,498,455	569,320	95,364,063	0	0	3,058	3,058	547,962	119,868,711
2005	934,677	76,776,803	571,224	95,737,748	0	0	3,058	3,058	548,706	120,268,531
2006	935,461	77,115,032	573,025	96,092,783	0	0	3,058	3,058	548,684	120,622,706
2007	922,681	76,030,242	566,156	94,828,543	0	0	3,058	3,058	548,738	119,360,451
2008	905,494	76,202,364	571,466	94,823,620	0	0	3,058	3,058	548,823	119,358,446
2009	920,869	76,370,889	569,677	95,166,614	0	0	3,058	3,058	548,926	119,705,055
2010	931,823	76,619,135	569,498	95,545,106	0	0	3,058	3,058	549,071	120,088,619
2011	944,274	77,074,707	570,933	96,153,690	0	0	3,058	3,058	549,098	120,698,159
2012	928,449	76,636,276	570,276	95,527,441	0	0	3,058	3,058	549,154	120,073,900
2013	869,337	75,351,446	571,020	93,560,500	0	0	3,058	3,058	549,675	118,125,146
2014	955,402	77,536,622	571,954	96,763,700	0	0	3,058	3,058	549,871	121,335,297
2015	943,643	77,337,818	572,895	96,430,853	0	0	3,058	3,058	549,862	121,002,176
2016	871,993	75,564,581	572,043	93,812,359	0	0	3,058	3,058	549,855	118,383,479
2017	916,058	76,902,673	574,504	95,685,492	0	0	3,058	3,058	550,266	120,270,966
2018	921,278	76,759,230	572,155	95,592,519	0	0	3,058	3,058	550,236	120,176,926
2019	922,308	76,799,848	572,292	95,645,951	0	0	3,058	3,058	550,244	120,230,592
2020	923,896	76,733,086	572,520	95,595,886	0	0	3,056	3,058	550,060	120,174,138
2021	945,030	77,426,499	573,014	96,539,530	0	0	3,056	3,058	550,065	121,117,799
2022	904,961	76,394,564	572,716	95,035,199	0	0	3,058	3,058	550,043	119,612,577
2023	930,048	77,189,090	573,276	96,126,858	0	0	3,058	3,058	550,059	120,704,756
2024	947,742	77,068,388	569,544	96,196,719	0	0	3,058	3,058	550,024	120,773,305
2025	910,844	76,868,441	575,702	95,590,827	0	0	3,058	3,058	550,045	120,168,007
2026	925,487	76,884,603	572,811	95,766,258	0	0	3,058	3,058	550,047	120,343,493
2027	928,574	76,699,459	570,265	95,605,912	0	0	3,058	3,058	550,033	120,182,725
2028	929,187	77,287,847	574,878	96,222,116	0	0	3,058	3,058	550,054	120,799,582
2029	917,362	76,401,576	569,940	95,174,949	0	0	3,058	3,058	550,035	119,751,787
2030	928,500	77,216,493	574,882	96,142,792	0	0	3,058	3,058	550,056	120,720,385
2031	930,769	77,005,163	572,519	95,947,569	0	0	3,058	3,058	550,049	120,524,891
2032	917,979	76,490,447	571,368	95,277,378	0	0	3,058	3,058	550,037	119,854,261
2033	916,077	76,841,646	573,374	95,615,495	0	0	3,058	3,058	550,062	120,193,235
2034	935,920	77,045,928	571,823	96,045,615	0	0	3,058	3,058	550,042	120,622,674
2035	1,006,393	70,783,146	501,567	90,300,261	0	0	3,058	3,058	549,981	114,875,326
TOTAL	47,642,872	4,006,824,410	30,276,716	4,985,458,201	0	0	173,652	173,652	28,858,101	6,232,388,159

TABLE B-16B  
Minimum OMP&R Component of Transportation Charge  
for Each Contractor for Off-Aqueduct Power Facilities

(in dollars)

Sheet 1 of 4

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County WA	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	10,070	0	10,070	47,473	31,446	863,937	942,856	0	0	0
1984	29,957	0	29,957	157,280	77,388	2,040,188	2,274,856	0	0	0
1985	54,709	0	54,709	458,427	582,679	2,696,449	3,737,555	0	0	0
1986	45,886	0	45,886	312,937	365,147	2,595,766	3,273,850	0	0	0
1987	90,385	0	90,385	622,029	674,111	2,306,079	3,602,219	0	0	0
1988	113,458	113,340	226,798	617,183	799,591	2,101,745	3,518,519	0	0	0
1989	77,256	154,807	232,063	484,777	481,358	1,683,552	2,629,687	0	0	0
1990	68,718	153,743	222,461	610,287	586,461	1,701,872	2,898,620	0	0	0
1991	78,385	172,071	250,456	542,970	743,186	1,619,365	2,905,521	0	219,646	219,646
1992	75,953	154,891	230,844	566,265	660,642	1,510,040	2,736,947	0	200,550	200,550
1993	81,461	160,316	241,777	590,042	652,151	1,521,687	2,763,880	0	0	0
1994	87,161	167,901	255,062	619,167	650,125	1,547,916	2,817,208	0	0	0
1995	87,948	203,046	290,994	619,754	619,754	1,475,605	2,715,113	0	0	0
1996	101,184	180,532	281,716	633,663	604,846	1,440,111	2,678,620	970,684	1,766,101	2,736,785
1997	106,561	183,906	290,467	656,136	599,080	1,426,381	2,681,597	961,430	1,749,264	2,710,694
1998	110,171	184,429	294,600	640,262	584,587	1,391,874	2,616,723	938,170	1,706,946	2,645,116
1999	111,551	181,573	293,124	613,802	560,428	1,334,351	2,508,581	899,398	1,636,402	2,535,800
2000	107,612	170,683	278,295	562,226	513,338	1,222,231	2,297,795	823,827	1,498,902	2,322,729
2001	110,923	170,855	281,578	554,457	506,243	1,205,340	2,266,040	812,441	1,478,187	2,290,628
2002	110,083	164,558	274,641	527,442	481,577	1,146,613	2,155,632	772,856	1,406,166	2,179,022
2003	108,877	158,383	267,260	500,899	457,342	1,068,910	2,047,151	733,963	1,335,402	2,069,365
2004	106,983	151,659	258,642	473,339	432,180	1,028,999	1,934,518	693,581	1,261,928	1,955,509
2005	100,903	139,574	240,477	429,977	392,588	934,733	1,757,298	630,042	1,146,325	1,776,367
2006	101,541	135,957	237,498	418,569	382,171	909,932	1,710,672	613,326	1,115,908	1,729,234
2007	98,196	127,404	225,600	391,985	357,898	852,140	1,602,023	574,371	1,045,035	1,619,406
2008	94,469	118,889	213,358	365,549	333,763	794,673	1,493,985	535,637	974,560	1,510,197
2009	90,062	110,041	200,103	338,130	308,728	735,067	1,381,925	495,461	901,460	1,396,921
2010	82,559	98,024	180,583	301,011	274,837	654,374	1,230,222	441,070	802,501	1,243,571
2011	81,100	93,165	174,265	285,908	261,046	621,539	1,168,493	418,939	762,234	1,181,173
2012	75,253	83,732	158,985	256,796	234,466	558,253	1,049,515	376,282	684,622	1,060,904
2013	20,329	21,932	42,261	67,219	61,374	146,129	274,722	98,496	179,207	277,703
2014	38,180	39,974	78,154	122,442	111,794	268,178	500,414	179,412	326,431	505,843
2015	15,419	15,683	31,102	48,004	43,831	104,358	196,193	70,340	127,981	198,321
2016	8,583	8,498	17,081	26,010	23,748	58,543	106,301	38,112	69,343	107,455
2017	3,962	3,821	7,783	11,695	10,679	25,424	47,798	17,137	31,179	48,316
2018	4,068	3,823	7,891	11,703	10,685	25,441	47,829	17,148	31,199	48,347
2019	4,177	3,828	8,005	11,720	10,700	25,476	47,896	17,173	31,243	48,416
2020	4,286	3,833	8,119	11,735	10,714	25,511	47,960	17,194	31,285	48,479
2021	4,296	3,839	8,135	11,753	10,731	25,551	48,035	17,221	31,334	48,555
2022	4,306	3,845	8,151	11,770	10,747	25,588	48,105	17,247	31,380	48,627
2023	4,316	3,852	8,168	11,789	10,764	25,630	48,183	17,275	31,431	48,706
2024	8,474	7,556	16,030	23,130	21,116	50,282	94,530	33,891	61,664	95,555
2025	0	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0
TOTAL	2,719,771	3,853,763	6,573,534	14,567,712	14,546,042	41,791,833	70,905,587	12,232,124	22,675,816	34,907,940

TABLE B-16B  
Minimum OMP&R Component of Transportation Charge for Each  
Contractor for Off-Aqueduct Power Facilities (Continued)

(in dollars)

Sheet 2 of 4

Calendar Year	SAN JOAQUIN VALLEY AREA							
	Dudley Ridge Water District	Empire West Side Irrigation District	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
			Municipal and Industrial	Agricultural				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	159,191	0	34,366	2,964,185	13,174	9,673	3,733	3,184,322
1984	389,518	0	816,103	9,095,509	26,774	33,576	49,601	10,411,081
1985	527,952	59,324	1,053,957	11,978,046	38,810	42,297	1,253,257	14,953,643
1986	552,171	12,858	885,988	11,788,715	40,659	38,275	872,009	14,190,675
1987	450,941	24,936	1,192,388	10,448,063	39,134	37,538	911,938	13,104,938
1988	427,210	30,932	1,133,020	9,927,859	35,605	26,785	853,333	12,434,744
1989	391,513	20,658	747,629	8,748,557	27,543	28,606	880,584	10,845,090
1990	250,128	8,814	947,775	5,488,433	13,783	14,157	393,288	7,116,378
1991	15,403	2,836	829,505	0	0	0	80,863	928,607
1992	338,109	17,579	846,650	8,647,494	23,439	22,781	694,383	10,590,435
1993	333,764	17,353	835,769	8,536,357	23,138	22,487	685,459	10,454,327
1994	332,727	17,299	833,171	7,453,984	23,066	22,418	683,329	9,365,994
1995	317,183	16,491	794,249	7,012,866	21,988	21,745	651,407	8,835,929
1996	309,553	16,095	780,092	6,880,745	21,459	20,856	635,737	8,664,537
1997	306,602	15,941	772,655	6,815,148	21,255	20,658	629,677	8,581,936
1998	299,185	15,555	753,963	6,650,272	20,740	20,158	614,444	8,374,317
1999	286,820	14,912	722,804	6,375,434	19,883	19,325	589,050	8,028,228
2000	262,720	13,659	662,070	5,839,736	18,213	17,701	539,555	7,353,654
2001	259,089	13,471	652,920	5,759,030	17,961	17,457	532,098	7,252,026
2002	246,465	12,815	621,108	5,478,433	17,086	16,606	506,173	6,898,686
2003	234,063	12,169	589,851	5,202,735	16,226	15,770	480,700	6,551,514
2004	221,184	11,501	557,397	4,916,483	15,333	14,902	454,253	6,191,053
2005	200,922	10,446	506,335	4,466,088	13,928	13,537	412,639	5,623,895
2006	195,591	10,170	492,900	4,347,589	13,559	13,178	401,690	5,474,677
2007	183,168	9,523	461,595	4,071,463	12,698	12,341	376,177	5,126,965
2008	170,816	8,881	430,466	3,796,891	11,841	11,509	350,809	4,781,213
2009	158,004	8,215	398,177	3,512,097	10,953	10,646	324,496	4,422,588
2010	140,658	7,314	354,467	3,126,549	9,751	9,477	288,874	3,937,090
2011	133,600	6,947	336,681	2,969,669	9,262	9,001	274,379	3,739,539
2012	119,997	6,239	302,399	2,667,293	8,319	8,085	246,441	3,358,773
2013	31,410	1,634	79,156	698,193	2,178	2,116	64,509	879,196
2014	57,215	2,975	144,185	1,271,776	3,966	3,855	117,504	1,601,476
2015	22,432	1,166	56,530	498,614	1,555	1,511	46,069	627,877
2016	12,154	632	30,629	270,160	843	819	24,961	340,198
2017	5,465	284	13,772	121,476	379	368	11,224	152,968
2018	5,469	284	13,781	121,554	379	369	11,230	153,066
2019	5,476	284	13,801	121,725	380	369	11,247	153,282
2020	5,483	285	13,819	121,886	381	370	11,261	153,485
2021	5,492	286	13,840	122,077	381	370	11,279	153,725
2022	5,500	286	13,861	122,257	381	370	11,296	153,951
2023	5,509	286	13,883	122,456	382	371	11,314	154,201
2024	10,808	562	27,237	240,242	749	728	22,197	302,523
2025	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0
TOTAL	8,386,660	431,897	20,780,944	188,798,139	597,534	583,161	16,024,467	235,602,802



TABLE B-16B  
Minimum OMP&R Component of Transportation Charge for Each  
Contractor for Off-Aqueduct Power Facilities (Continued)

(in dollars)

Sheet 3 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley- East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline- Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	1,083,881	411,247	565,798	35,432	894,572	1,250	0	0	233,134	28,548
1984	2,499,848	1,122,640	1,427,428	102,114	2,263,172	77	0	0	502,967	693,074
1985	3,775,658	1,572,025	2,032,672	170,137	3,230,452	0	0	131,200	884,188	601,582
1986	3,159,658	1,694,487	2,097,407	173,460	3,340,188	15,872	0	301,486	739,563	1,088,902
1987	3,167,759	1,694,698	1,991,841	190,149	3,230,424	95,994	1,766	258,719	1,951,799	1,091,691
1988	2,688,189	1,767,924	1,926,823	187,160	3,172,187	33,051	840	139,620	1,995,304	834,845
1989	2,764,010	1,587,002	1,578,673	156,619	2,634,370	59,251	14,435	549,736	1,499,931	926,649
1990	2,883,016	1,522,493	1,668,557	132,618	2,752,035	106,688	0	525,684	1,360,199	1,202,589
1991	2,615,214	1,592,432	1,553,886	162,788	2,562,902	97,593	3,417,203	742,183	2,018,033	1,210,820
1992	3,403,663	1,704,034	1,418,793	159,077	2,340,087	119,434	3,120,117	836,557	1,842,589	1,105,553
1993	3,516,725	1,937,849	1,400,558	165,824	2,310,012	117,899	3,080,017	885,781	2,425,210	1,091,344
1994	3,679,233	2,145,630	1,396,206	173,770	2,302,834	117,532	3,070,445	884,050	2,780,324	1,087,953
1995	3,669,817	2,244,770	1,330,982	174,007	2,195,255	112,042	2,927,007	842,752	2,650,439	1,037,128
1996	3,917,524	2,228,263	1,298,966	213,008	2,142,450	109,347	2,856,601	822,480	2,811,615	862,603
1997	4,087,274	2,207,019	1,286,582	220,056	2,122,026	108,305	2,829,367	814,639	2,784,811	873,316
1998	4,190,663	2,153,825	1,255,457	223,591	2,070,689	105,684	2,760,918	794,931	2,717,439	870,668
1999	4,211,254	2,064,622	1,203,572	222,844	1,985,112	101,317	2,646,817	762,078	2,605,135	852,400
2000	4,034,938	1,891,141	1,102,442	211,896	1,818,312	92,804	2,424,417	698,044	2,386,237	797,003
2001	4,138,382	1,865,006	1,087,205	215,841	1,793,184	91,521	2,390,911	688,397	2,353,259	801,991
2002	4,088,122	1,774,137	1,034,234	211,861	1,705,815	87,062	2,274,419	654,856	2,238,602	778,138
2003	4,026,182	1,684,854	982,187	207,407	1,619,971	82,680	2,159,961	621,901	2,125,945	753,435
2004	3,940,544	1,592,155	928,147	201,862	1,530,841	78,131	2,041,121	587,684	2,169,696	725,642
2005	3,702,988	1,446,299	843,121	188,698	1,390,601	70,974	1,854,135	533,848	2,116,926	671,576
2006	3,604,736	1,407,923	820,750	186,748	1,353,704	69,091	1,804,939	519,683	2,202,878	665,838
2007	3,375,790	1,318,503	768,622	177,748	1,267,728	64,702	1,690,303	486,677	2,196,062	634,862
2008	3,148,133	1,229,587	716,787	168,430	1,182,234	60,339	1,576,313	453,856	2,172,084	602,598
2009	2,912,000	1,137,358	663,024	158,264	1,093,558	55,814	1,458,077	419,814	2,123,971	567,157
2010	2,592,330	1,012,502	590,239	143,088	973,510	49,687	1,298,014	373,727	1,993,014	513,585
2011	2,462,235	961,698	560,622	136,879	924,663	47,193	1,232,884	354,975	1,990,088	496,552
2012	2,211,544	863,776	503,539	123,814	830,512	42,388	1,107,349	318,831	1,874,647	453,839
2013	578,896	226,102	131,807	32,638	217,396	11,095	289,861	83,457	513,533	120,852
2014	1,054,473	411,853	240,089	59,866	395,992	20,211	527,989	152,019	956,201	223,875
2015	413,419	161,471	94,130	23,634	155,253	7,924	207,004	59,602	383,039	89,240
2016	224,000	87,488	51,001	12,806	84,120	4,293	112,159	32,293	211,955	49,103
2017	100,720	39,339	22,932	5,758	37,824	1,931	50,431	14,521	97,290	22,416
2018	100,785	39,364	22,948	5,761	37,848	1,932	50,464	14,530	99,339	22,769
2019	100,927	39,420	22,980	5,769	37,902	1,934	50,536	14,550	99,957	23,139
2020	101,061	39,471	23,010	5,778	37,951	1,937	50,603	14,569	100,567	23,508
2021	101,218	39,533	23,046	5,787	38,011	1,940	50,681	14,592	101,203	23,884
2022	101,367	39,591	23,080	5,795	38,067	1,943	50,756	14,614	101,831	24,259
2023	101,533	39,656	23,118	5,804	38,129	1,946	50,839	14,638	102,477	24,639
2024	199,193	77,799	45,354	11,387	74,804	3,818	99,738	28,717	201,441	49,005
2025	0	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0
TOTAL	102,729,102	49,076,786	36,758,615	5,375,975	60,226,697	2,254,626	51,629,457	16,462,291	62,714,922	24,618,570

Note: As of January 1, 1992, Castaic Lake Water Agency will assume all rights and obligations granted to Devil's Den Water District according to its long-term water supply contract with the state of California.



TABLE B-16B  
Minimum OMP&R Component of Transportation Charge for Each  
Contractor for Off-Aqueduct Power Facilities (Continued)

(in dollars)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				TOTAL STATE WATER PROJECT (1)
	San Geronio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total	
	[29]	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]
1971	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0
1983	0	12,791,358	0	16,045,220	0	0	0	0	20,182,468
1984	0	39,229,567	0	47,840,887	0	0	0	0	60,556,781
1985	0	77,446,522	0	89,844,436	0	0	0	0	108,590,343
1986	0	77,581,287	0	90,192,510	0	0	0	0	107,702,921
1987	0	68,939,195	0	82,614,055	0	0	0	0	99,411,597
1988	0	79,972,630	0	92,718,773	0	0	0	0	108,896,834
1989	0	79,524,689	0	91,295,365	0	0	0	0	105,002,205
1990	0	95,732,189	0	107,886,068	0	0	0	0	118,123,527
1991	0	107,441,801	449,054	123,863,909	0	0	0	0	128,168,139
1992	0	99,820,583	278,542	116,149,029	0	0	0	0	129,907,805
1993	0	103,761,965	274,962	120,968,146	0	0	0	0	134,428,130
1994	0	105,996,188	274,107	123,908,272	0	0	0	0	136,346,536
1995	0	101,044,519	261,302	118,490,020	0	0	0	0	130,332,056
1996	0	101,889,654	810,954	119,963,465	0	0	0	0	134,325,123
1997	0	100,918,301	823,430	119,075,126	0	0	0	0	133,339,820
1998	0	98,476,833	823,227	116,443,725	0	0	0	0	130,374,481
1999	0	94,407,047	808,108	111,870,306	0	0	0	0	125,236,039
2000	825,639	86,474,456	757,521	103,514,852	0	0	0	0	115,767,325
2001	814,228	85,279,373	761,481	102,280,779	0	0	0	0	114,371,051
2002	774,556	81,124,316	738,105	97,484,223	0	0	0	0	108,992,204
2003	735,577	77,041,784	713,996	92,755,880	0	0	0	0	103,691,170
2004	695,106	72,802,984	687,030	87,980,943	0	0	0	0	98,320,665
2005	631,428	66,133,566	635,612	80,219,772	0	0	0	0	89,617,809
2006	614,674	64,378,836	623,968	78,253,768	0	0	0	0	87,405,849
2007	575,635	60,289,971	589,227	73,435,830	0	0	0	0	82,009,824
2008	536,815	56,224,139	554,050	68,625,365	0	0	0	0	78,624,118
2009	496,550	52,006,919	516,710	63,609,216	0	0	0	0	71,010,753
2010	442,040	46,297,758	463,510	56,743,004	0	0	0	0	83,334,470
2011	419,860	43,974,683	440,252	54,002,584	0	0	0	0	60,266,054
2012	377,109	39,497,106	395,425	48,599,879	0	0	0	0	54,228,056
2013	98,712	10,338,799	103,507	12,746,655	0	0	0	0	14,220,537
2014	179,807	18,832,382	188,540	23,243,297	0	0	0	0	25,929,184
2015	70,495	7,383,452	73,919	9,122,582	0	0	0	0	10,176,075
2016	38,196	4,000,517	40,051	4,947,982	0	0	0	0	5,519,017
2017	17,174	1,798,808	18,009	2,227,153	0	0	0	0	2,484,018
2018	17,185	1,799,966	18,020	2,230,911	0	0	0	0	2,488,044
2019	17,210	1,802,504	18,046	2,234,874	0	0	0	0	2,492,473
2020	17,233	1,804,887	18,070	2,238,645	0	0	0	0	2,496,688
2021	17,260	1,807,707	18,098	2,242,960	0	0	0	0	2,501,410
2022	17,285	1,810,369	18,124	2,247,081	0	0	0	0	2,505,915
2023	17,313	1,813,319	18,154	2,251,565	0	0	0	0	2,510,823
2024	33,966	3,557,485	35,616	4,418,323	0	0	0	0	4,926,961
2025	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0
TOTAL	8,481,053	2,333,250,614	13,248,727	2,766,827,435	0	0	0	0	3,114,817,298

1) 1989 costs were reduced by credits related to delivery of purchased Yuba County water to the Department of Fish and Game (\$159,150), Napa County (\$55,756), Santa Clara (\$356,726), and Tulare (\$422,241).

TABLE B-17  
Unit Variable OMP&R Component of Transportation Charge

(in dollars per acre-foot)

Sheet 1 of 4

Calendar Year	NORTH BAY AQUEDUCT						SOUTH BAY AQUEDUCT		CALIFORNIA AQUEDUCT	
	Reach 1 Barker Slough Pumping Plant		Reach 3A Cordelia Pumping Plant Solano County WA		Reach 3B Cordelia Pumping Plant Napa County FC&WCD (a)		Reach 1 South Bay and Del Valle Pumping Plants (b)		Reach 1 Banks Pumping Plant	
	Unit Rate	Cumulative	Unit Rate	Cumulative	Unit Rate	Cumulative	Unit Rate	Cumulative	Unit Rate	Cumulative
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	4.1511341	4.1511341	0	0
1963	0	0	0	0	0	0	4.5639383	4.5639383	0	0
1964	0	0	0	0	0	0	3.5452154	3.5452154	0	0
1965	0	0	0	0	0	0	4.1911773	4.1911773	0	0
1966	0	0	0	0	0	0	3.5074573	3.5074573	0	0
1967	0	0	0	0	0	0	3.3036767	5.1337448	1.2030681	1.2030681
1968	0	0	0	0	5.7570016	5.7570016	3.3315620	4.8750942	1.5435322	1.5435322
1969	0	0	0	0	3.1823595	3.1823595	3.6949019	4.8016170	1.1067151	1.1067151
1970	0	0	0	0	3.7584301	3.7584301	4.4256141	5.3721490	0.9465349	0.9465349
1971	0	0	0	0	4.2082507	4.2082507	3.8714396	4.7522833	0.8808437	0.8808437
1972	0	0	0	0	3.9577735	3.9577735	4.3250690	5.2281686	0.9030996	0.9030996
1973	0	0	0	0	3.8103903	3.8103903	5.2455409	6.1841800	0.9386391	0.9386391
1974	0	0	0	0	3.5878850	3.5878850	6.3321503	7.2293909	0.8972406	0.8972406
1975	0	0	0	0	2.1606725	2.1606725	3.7365711	4.8327731	1.0962020	1.0962020
1976	0	0	0	0	2.9283909	2.9283909	4.5191527	5.7132795	1.1941268	1.1941268
1977	0	0	0	0	2.7516411	2.7516411	4.7630172	6.5305908	1.7679736	1.7679736
1978	0	0	0	0	3.5949619	3.5949619	5.2086183	6.8202029	1.6114026	1.6114026
1979	0	0	0	0	2.4747752	2.4747752	4.9524184	7.0889234	2.1365050	2.1365050
1980	0	0	0	0	2.9737588	2.9737588	4.5186576	5.8865852	1.3679276	1.3679276
1981	0	0	0	0	2.6494834	2.6494834	4.3847205	6.4701082	2.0853877	2.0853877
1982	0	0	0	0	10.0239077	10.0239077	4.9779475	6.7250874	1.7471399	1.7471399
1983	0	0	0	0	1.1674683	1.1674683	1.5086524	2.3670257	0.8583733	0.8583733
1984	0	0	0	0	1.5419090	1.5419090	2.5890830	3.7990376	1.2099546	1.2099546
1985	0	0	0	0	2.4813073	2.4813073	4.1328550	5.8205494	1.6876944	1.6876944
1986	0	0	0	0	4.3779483	4.3779483	7.4623383	11.0065695	3.5442312	3.5442312
1987	0	0	0	0	3.5446510	3.5446510	6.3798430	9.8379874	3.4581444	3.4581444
1988	0.9668607	0.9668607	0	0	5.0508160	6.0176767	6.1888703	9.3818969	3.2130266	3.2130266
1989	1.0641518	1.0641518	3.0406471	4.1047989	3.7556952	4.8198470	9.0452312	12.9912343	3.9460031	3.9460031
1990	3.3616932	3.3616932	4.2141304	7.5758236	5.2735198	8.6352130	12.0522130	16.5502723	4.4980593	4.4980593
1991	2.5953786	2.5953786	4.1846505	6.7800291	5.6248517	8.2202303	10.0139440	14.2132483	4.1993043	4.1993043
1992	3.4347368	3.4347368	5.8928875	9.3276243	9.094830	12.5342198	14.1388656	20.5096494	6.3707838	6.3707838
1993	5.9939244	5.9939244	7.0826981	13.0766225	10.2264660	16.2203904	14.6941094	21.1732578	6.4791484	6.4791484
1994	3.8093669	3.8093669	6.9396929	10.7490598	11.5914210	15.4007879	19.4188846	27.8747853	8.2559007	8.2559007
1995	3.9896017	3.9896017	8.2115848	12.2011865	11.9463437	15.9359454	20.0169674	28.4888860	8.4719186	8.4719186
1996	4.1548874	4.1548874	7.5872873	11.7421747	12.3925485	16.5474359	20.7619153	29.3931208	8.6312055	8.6312055
1997	4.5175814	4.5175814	8.3178713	12.8354527	13.4123544	17.9299358	22.4830053	31.7299596	9.2469543	9.2469543
1998	4.5682724	4.5682724	8.4652441	13.0335165	13.5034095	18.0716819	22.6286649	31.9645045	9.3358396	9.3358396
1999	4.5635814	4.5635814	8.5195107	13.0830721	13.4423372	18.0058996	22.4916383	31.7845434	9.2929051	9.2929051
2000	4.8045946	4.8045946	9.0343831	13.8389777	14.0982375	18.9028321	23.5636064	33.2452261	9.6816197	9.6816197
2001	4.8277649	4.8277649	9.1360682	13.9638331	14.1279326	18.9556975	23.6127500	33.3034285	9.6906785	9.6906785
2002	4.8853705	4.8853705	9.3109080	14.1962785	14.2720309	19.1574014	23.8268723	33.5983505	9.7714782	9.7714782
2003	4.9603909	4.9603909	9.5183802	14.4787711	14.4551282	19.4155191	24.1268564	33.9977427	9.8708863	9.8708863
2004	5.0983302	5.0983302	9.8530521	14.9513823	14.8245295	19.9228527	24.7129415	34.7985828	10.0856413	10.0856413
2005	5.4533913	5.4533913	10.6046667	16.0580580	15.8218750	21.2752663	26.3519415	37.0358207	10.6838792	10.6838792
2006	5.4544844	5.4544844	10.5896667	16.0431511	15.8032044	21.2576888	26.3122819	36.9670222	10.6547403	10.6547403
2007	5.4847307	5.4847307	10.6337143	16.1184450	15.8824941	21.3672248	26.4241154	37.1324154	10.7029894	10.7029894
2008	5.5367471	5.5367471	10.7106571	16.2476042	16.0055619	21.5423090	26.6158404	37.3848057	10.7689653	10.7689653
2009	5.5949048	5.5949048	10.8060476	16.4009524	16.1622247	21.7571295	26.8524309	37.6974323	10.8450014	10.8450014
2010	5.6716956	5.6716956	10.9311429	16.6028365	16.3698930	22.0415886	27.1633457	38.1295221	10.9661764	10.9661764
2011	5.6973176	5.6973176	10.9576667	16.6549843	16.4329886	22.1303062	27.2292394	38.2142348	10.9849954	10.9849954
2012	5.7344331	5.7344331	11.0066190	16.7410521	16.5315315	22.2659646	27.3508564	38.3835588	11.0327022	11.0327022
2013	5.9942099	5.9942099	11.4742857	17.4684956	17.2747333	23.2689432	28.5129628	39.9445624	11.4315996	11.4315996
2014	6.0912039	6.0912039	11.6415714	17.7327753	17.5686265	23.6598304	28.9286702	40.5354404	11.6067702	11.6067702
2015	6.1025665	6.1025665	11.6332381	17.7358046	17.6140639	23.7166304	28.9078298	40.5109873	11.6031575	11.6031575
2016	6.1108682	6.1108682	11.6273810	17.7382492	17.6644444	23.7753126	28.8934362	40.4903883	11.5969521	11.5969521
2017	6.3187097	6.3187097	11.9969048	18.3156145	18.3107359	24.6294456	29.8115691	41.7278606	11.9160915	11.9160915
2018	6.3158295	6.3158295	11.9700476	18.2858771	18.3679747	24.6838042	29.7449202	41.6361422	11.8912220	11.8912220
2019	6.3338311	6.3338311	11.9772381	18.3110692	18.4924691	24.8263002	29.7628817	41.6577024	11.8948407	11.8948407
2020	6.2580120	6.2580120	11.8137143	18.0717263	18.3546185	24.6126305	29.564043	41.1075484	11.7511441	11.7511441
2021	6.2641064	6.2641064	11.8210000	18.0851064	18.3732343	24.6373407	29.3745106	41.1181263	11.7436157	11.7436157
2022	6.2557365	6.2557365	11.8068571	18.0625936	18.3530072	24.6087437	29.3932660	41.0505668	11.7113008	11.7113008
2023	6.2653823	6.2653823	11.8206095	18.0861918	18.3765224	24.6419047	29.3740372	41.0997912	11.7257540	11.7257540
2024	6.2452225	6.2452225	11.7862857	18.0315082	18.3301441	24.5753666	29.2882872	40.9898758	11.7015886	11.7015886
2025	6.2596716	6.2596716	11.8131905	18.0728621	18.3737600	24.6334316	29.3551170	41.0529650	11.6977480	11.6977480
2026	6.2608209	6.2608209	11.8153810	18.0762019	18.3771600	24.6379809	29.3605585	41.0582550	11.6976965	11.6976965
2027	6.2537910	6.2537910	11.8021429	18.0559339	18.3565600	24.6103510	29.3276117	41.0198452	11.6922335	11.6922335
2028	6.2638358	6.2638358	11.8210476	18.0848834	18.3860000	24.6498358	29.3746755	41.0780080	11.7033325	11.7033325
2029	6.2546567	6.2546567	11.8037619	18.0584186	18.3590400	24.6136967	29.3316170	41.0222963	11.6906793	11.6906793
2030	6.2658209	6.2658209	11.8248095	18.0906304	18.3918800	24.6577009	29.3840213	41.0895635	11.7055422	11.7055422
2031	6.2612687	6.2612687	11.8162381	18.0775068	18.3784800	24.6397487	29.3626117	41.0645357	11.7019240	11.7019240
2032	6.2548358	6.2548358	11.8040952	18.0589310	18.3596000	24.6144358	29.3324787	41.0257303	11.6932516	11.6932516
2033	6.2692090	6.2692090	11.8312381	18.1004471	18.4018000	24.6710090	29.3998989	41.1039750	11.7040761	11.7040761
2034	6.2583284	6.2583284	11.8106667	18.0689951	18.3698400	24.6281684	29.3488564	41.0430224	11.6941660	11.6941660
2035	6.2308507	6.2308507	11.7588095	17.9896602	18.2892400	24.5200907	29.2200106	40.8653315	11.6453209	11.6453209

a) For the period 1988 through 1987, rates are for an interim facility.

b) The relatively minor costs of Del Valle Pumping Plant have been combined with those of South Bay Pumping Plant to simplify the allocation procedure.

TABLE B-17  
Unit Variable OMP&R Component of Transportation Charge (Continued)

(in dollars per acre-foot)

Sheet 2 of 4

Calendar Year	CALIFORNIA AQUEDUCT (continued)									
	Reach 4 Dos Amigos Pumping Plant		Reach 14A Buena Vista Pumping Plant		Reach 15A Wheeler Ridge Pumping Plant		Reach 16A Chrisman Pumping Plant		Reach 17E Edmonston Pumping Plant	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	1.0732031	2.6167353	0	0	0	0	0	0	0	0
1969	0.7028165	1.8095316	0	0	0	0	0	0	0	0
1970	0.7813430	1.7278779	0.3333333	2.0612112	0	0	0	0	0	0
1971	0.4125312	1.2933749	1.3594550	2.6528299	4.9729730	7.6258029	0	0	0	0
1972	0.5554925	1.4585921	1.0808850	2.5394771	1.1418280	3.6813051	2.2892599	5.9705650	7.3206022	13.2911672
1973	0.5996892	1.5383283	0.9844807	2.5228090	3.7371809	2.1051633	5.8423442	7.4512435	13.2935877	13.2935877
1974	0.5736894	1.4709300	0.9223291	2.3932591	1.0924098	3.4856689	1.9449022	5.4305711	6.9004732	12.3310443
1975	0.4602594	1.5564614	0.8190649	2.3755463	0.9574493	3.3329956	1.9610412	5.2940368	6.9962702	12.2903070
1976	0.5163827	1.7105095	0.9626678	2.6731771	1.0211874	3.6943645	2.2275746	5.9219391	7.9384515	13.8603906
1977	0.6138931	2.3818667	1.0969170	3.4787837	1.3715867	4.8503704	2.9301784	7.7805468	9.9990004	17.7795472
1978	0.4199303	2.0313329	0.9606230	2.9919559	1.0432294	4.0351853	1.9779157	6.0131010	7.0810192	13.0941202
1979	0.6587934	2.7952984	1.1099369	3.9052353	1.2652451	5.1704804	2.6939701	7.8644505	9.6345625	17.4990130
1980	0.8056952	2.1736228	1.3516057	3.5252285	1.5041463	5.0293748	3.1923433	8.2217181	10.9660288	19.2077469
1981	1.1004473	3.1858350	1.2432708	4.4291058	1.3245935	5.7536993	2.9657710	8.7194703	9.9884420	18.7079123
1982	0.8307526	2.5778925	1.2001820	3.7780745	1.3686811	5.1449356	2.8880977	8.0330333	10.1781508	18.2111841
1983	0.3922614	1.2506347	0.7581088	2.0087435	0.8844225	2.8931660	1.7654349	4.6586009	5.5224174	10.1810183
1984	0.6744472	1.8844018	1.0070388	2.8914406	1.1866349	4.0580755	2.4197504	6.4778259	7.8119975	14.2886234
1985	0.9011329	2.5888273	1.4736784	4.0625057	1.7028364	5.7653421	3.5821509	9.3474930	12.1688390	21.5163320
1986	1.3925909	4.9368221	2.3674309	7.3042530	2.7518658	10.0561186	5.9424378	15.9985564	20.5596458	36.5582022
1987	1.2942354	4.7523798	2.2382805	6.9906603	2.5033337	9.5409940	5.3240974	14.8650914	17.7982770	32.6633684
1988	1.2126418	4.4256684	2.1476097	6.5732781	2.4442287	9.0175068	5.1023565	14.1196633	16.9367377	31.0566010
1989	1.6293140	5.5753171	2.8940759	8.4693930	3.2432289	11.7126219	7.0673405	18.7796624	24.0371020	42.8170644
1990	1.8157060	6.3137653	3.3037176	9.6174829	3.7433544	13.3608373	8.6713661	22.0322034	30.9970933	53.0292967
1991	1.0365674	5.2538717	1.8707378	7.1066093	2.2774503	9.3840596	4.9305688	14.3146284	17.5786349	31.8932633
1992	2.7035094	9.0742932	4.3767999	13.4510931	5.3259052	18.7769983	11.2028318	29.9798301	39.3766960	69.3565261
1993	2.7993142	9.2784626	4.4386624	13.7171250	5.4027838	19.1199088	11.3589586	30.4788674	39.9148359	70.3937033
1994	3.5835808	11.8394815	5.7793965	17.6188780	7.0413660	24.6602440	14.9332451	39.5934891	52.7435918	92.3370809
1995	3.6792805	12.1511991	5.9430191	18.0942182	7.2406837	25.3349019	15.3688559	40.7037578	54.3058364	95.0095942
1996	3.7895066	12.4207121	6.1221018	18.5428139	7.4548502	25.9976641	15.8497352	41.8473993	56.0579325	97.9053318
1997	4.0679029	13.3148572	6.5990121	19.9138693	8.0368028	27.9496211	17.1161876	45.0661397	60.5944844	111.8006139
1998	4.0937423	13.4296819	6.6410054	20.0705873	8.0873550	28.1579423	17.2258330	45.3837753	60.9840272	106.3678025
1999	4.0765647	13.3694698	6.6062978	19.9757676	8.0446121	28.0203797	17.1289609	45.1493406	60.284162	105.777568
2000	4.2491086	13.9307283	6.9035752	20.8343035	8.4072473	29.2415508	17.9212263	47.1627771	63.4688296	110.6316067
2001	4.2558648	13.9465433	6.9166723	20.8632156	8.4230235	29.2862391	17.9565462	47.2427853	63.5973440	110.8401293
2002	4.2938138	14.0529202	6.9782774	21.0435694	8.4986223	29.5421317	18.1182351	47.6603668	64.1702471	111.8306139
2003	4.3444368	14.2153231	7.0630883	21.2784114	8.6020945	29.8805059	18.3419513	48.2224572	64.9689582	113.1914154
2004	4.4388500	14.5244913	7.2262922	21.7507835	8.8007004	30.5514839	18.7754685	49.3269524	66.5228823	115.8498347
2005	4.7120318	15.3959110	7.6878535	23.0837645	9.3636204	32.4473849	19.9960585	52.4434434	70.8823104	123.3257538
2006	4.7044442	15.3591845	7.6759572	23.0351417	9.3487301	32.3838718	19.9654106	52.3492824	70.7752958	123.1245782
2007	4.7240027	15.4323281	7.7082149	23.1405430	9.3882724	32.5288154	20.0493071	52.5781225	71.0741309	123.652534
2008	4.7552484	15.5242137	7.7616728	23.2858865	9.4533881	32.7392746	20.1920098	52.9312844	71.5834609	124.5147453
2009	4.7941182	15.6391196	7.8281653	23.4672849	9.5342041	33.0014890	20.3676552	53.3691442	72.2114573	125.5806015
2010	4.8452530	15.8114294	7.9151045	23.7265339	9.6403226	33.3668565	20.5985071	53.9653636	73.0376676	127.0030312
2011	4.8550289	15.8400243	7.9330284	23.7730527	9.6623805	33.4354332	20.6466289	54.0820621	73.2114046	127.2934667
2012	4.8755437	15.9082459	7.9672591	23.8755050	9.7043340	33.5798390	20.7375388	54.3173778	73.5352453	127.8526231
2013	5.0717011	16.5033007	8.2959740	24.7992747	10.1051937	34.9044684	21.6046985	56.5091669	76.6291313	133.1382982
2014	5.1379510	16.7447212	8.4114690	25.1561902	10.2457720	35.4019622	21.9116981	57.3136803	77.7316801	135.0453404
2015	5.1345241	16.7376816	8.4054010	25.1430826	10.2383474	35.3814300	21.8963199	57.2777499	77.6758520	134.9536019
2016	5.1359581	16.7329102	8.4068218	25.1397320	10.2400867	35.3798187	21.8966174	57.2764361	77.6713797	134.9478158
2017	5.2830508	17.1991423	8.6537323	25.8528746	10.5402725	36.3931471	22.5480583	58.9412054	79.9938999	138.9405953
2018	5.2720824	17.1633044	8.6356419	25.7989463	10.5182426	36.3171889	22.5005609	58.8177498	79.8298678	138.6476176
2019	5.2748229	17.1696636	8.6404174	25.8100810	10.5239949	36.3340759	22.5132174	58.8472933	79.8753451	138.7226384
2020	5.2086591	16.9598032	8.5304357	25.4902389	10.3903113	35.8805502	22.2238373	58.1043875	78.8427916	136.9471791
2021	5.2056999	16.9493156	8.5232815	25.4725971	10.3807206	35.8533177	22.2037376	58.0570553	78.7722194	136.8292747
2022	5.1964612	16.9077620	8.5031231	25.4108851	10.3552998	35.7861849	22.1475099	57.9136948	78.5693942	136.4830890
2023	5.1961024	16.9218564	8.5005106	25.4232670	10.3512914	35.7735984	22.1394802	57.9130786	78.5421854	136.4552440
2024	5.1774607	16.8790493	8.4661375	25.3451868	10.3085047	35.6536915	22.0469118	57.7006033	78.2113985	135.9120018
2025	5.1837106	16.8814586	8.4729452	25.3544038	10.3159447	35.6703485	22.0625338	57.7328823	78.2665834	135.9994657
2026	5.1845224	16.8822189	8.4743839	25.3566028	10.3176844	35.6742872	22.0663079	57.7405951	78.2802340	136.0208291
2027	5.1793772	16.8716107	8.4656118	25.3732225	10.3076065	35.6442830	22.0431020	57.6873850	78.1971367	135.8405217
2028	5.1862179	16.8895504	8.4778520	25.3674024	10.3219552	35.6893576	22.0760885	57.7654461	78.3160215	136.0814676
2029	5.1803519	16.8710312	8.4668478	25.3378790	10.3085302	35.6464092	22.0461066	57.6925158	78.2072771	135.8997929
2030	5.1877075	16.8932497	8.4804186	25.3736683	10.3249933	35.6986616	22.0826879	57.7813495	78.3395436	136.1294931
2031	5.1844623	16.8863863	8.4747341	25.3611204	10.3181461	35.6792665	22.0676731	57.7469396	78.2855348	136.0324744
2032	5.1802160	16.8734676	8.4669551	25.3404227	10.3086707	35.6490934	22.0465716	57.6956650	78.2093742	135.9050392
2033	5.1906863	16.8947424	8.4848606	25.3796030	10.3303952	35.7099982	22.0940596	57.8040578	78.3795449	136.1836027
2034	5.1820313	16.8761973	8.4709471	25.3471444	10.3135265	35.6606709	22.0578482	57.7185171	78.2508558	135.9693729
2035	5.1695569	16.8148778	8.4404125	25.2552903	10.2762956	35.5315859	21.9703764	57.5019623	77.9258346	135.4277969

TABLE B-17  
Unit Variable OMP&R Component of Transportation Charge (Continued)

(in dollars per acre-foot)

Sheet 3 of 4

Calendar Year	CALIFORNIA AQUEDUCT (continued)									
	Reach 18A Alamo Powerplant		Reach 22B Pearblossom Pumping Plant		Reach 23 Mojave Siphon Powerplant		Reach 26A Devil Canyon Powerplant		Reach 29A Oso Pumping Plant	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	14.2519509	27.5431181	0	0	-2.3717647	25.1713534	1.4212193	14.7123865
1973	0	0	4.4326545	17.7262422	0	0	-8.4298818	9.2963804	1.0210537	14.3146414
1974	0	0	3.4431782	15.7742225	0	0	-5.1043660	10.6698565	0.9241725	13.2552168
1975	0	0	3.1739313	15.4642383	0	0	-5.6510611	9.8131772	0.9362286	13.2265356
1976	0	0	3.9391330	17.7995236	0	0	-6.4449941	11.3545295	0.8622774	14.7226680
1977	0	0	3.4988957	21.2784429	0	0	-11.6274558	9.6509871	0.9076172	18.6871644
1978	0	0	4.1377503	17.2318705	0	0	-8.1314274	9.1004431	0.7314697	13.8255899
1979	0	0	5.1961178	22.6951308	0	0	-9.5825772	13.1125536	0.9504526	18.4494566
1980	0	0	4.3918283	23.5995752	0	0	-8.3797007	15.2198745	1.4269064	20.6346533
1981	0	0	4.0222148	22.7301271	0	0	-4.3565125	18.3736146	1.5670894	20.2750017
1982	0	0	3.6618080	21.8729921	0	0	-7.9124667	13.9605254	1.4942612	19.7054453
1983	0	0	1.6396483	11.8206666	0	0	-23.8742905	-12.0536239	1.4680919	11.6491102
1984	0	0	2.3683525	16.8581759	0	0	-29.7599667	-13.1017908	1.7215519	16.0113753
1985	0	0	3.5414673	25.0577993	0	0	-30.7609808	-5.7031815	2.2334897	23.7498217
1986	-2.3474750	34.2107272	5.9820629	40.1927901	0	0	-29.2492016	10.9435885	3.2193040	39.7775062
1987	-2.5172530	30.1461154	5.0635729	35.2096883	0	0	-29.7003319	5.5093564	3.3121092	35.7954776
1988	-1.4083269	29.6482741	4.8928030	34.5410771	0	0	-29.5480148	4.9930623	3.0027230	34.0593240
1989	-1.0897398	41.7273246	6.9395407	48.6668653	0	0	-27.9103153	20.7665500	3.7608786	46.5779430
1990	-1.0670758	51.9622209	8.9683366	60.9305575	0	0	-28.8603818	32.0701757	3.1645206	56.7051840
1991	-1.2156553	30.6776080	5.4923652	36.1699732	0	0	-28.5151105	7.6548627	2.1411274	34.0343907
1992	-1.1001824	68.2563437	12.3506093	80.6069530	0	0	-27.9062997	52.7006533	5.2277075	74.5842326
1993	-1.1233601	69.2703432	12.3324932	81.6026364	0	0	-27.6164549	53.9863815	5.4207492	75.8144555
1994	-0.4441161	88.2929648	16.2900332	104.5829980	-3.8486577	100.7343403	-28.4351324	72.2992079	6.9275393	99.2646202
1995	-3.6268468	91.3827474	16.7747948	108.1575422	-6.9018921	101.2556501	-28.4503213	72.8053288	7.1079994	102.1175936
1996	-3.5562451	94.3490867	17.1761315	111.5252182	-7.0873911	104.4378271	-28.0826850	76.3551421	7.3490426	105.2543744
1997	-3.6183491	102.0422750	18.5676724	120.6099474	-7.6322640	112.9776834	-27.9162993	85.0613841	7.8741283	113.5347524
1998	-3.6130358	102.7547667	18.6894095	121.4441762	-7.5343328	113.9098434	-27.9501974	85.9596460	7.9496123	114.3174148
1999	-3.6112539	102.1665029	18.5737944	120.7402973	-7.3440308	113.3962665	-28.0057172	85.3905493	7.9016880	113.6794448
2000	-3.6210195	107.0105872	19.4514523	126.4620395	-7.7532763	118.7087632	-27.8233379	90.8854253	8.2545206	118.8861273
2001	-3.6116588	107.2284705	19.4915711	126.7200416	-7.3521936	119.3678480	-27.9489375	91.4189105	8.2690104	119.1091397
2002	-3.6107392	108.2198747	19.6641995	127.8840742	-7.2505856	120.6334886	-27.9733049	92.6601837	8.3416556	120.1722695
2003	-3.5756716	109.6157438	19.9078868	129.5236306	-7.1458918	122.3777388	-27.9971807	94.3805581	8.4374813	121.6288967
2004	-3.6032409	112.2465938	20.3873259	132.6339197	-7.5341640	125.0997557	-27.8734020	97.2263537	8.6266846	124.4785193
2005	-3.6032279	119.7225259	21.7235963	141.4461222	-7.7904835	133.6556387	-27.7855460	105.8700927	9.1646998	132.4904536
2006	-3.6002222	119.5243560	21.6918538	141.2162098	-7.3729830	133.8432268	-27.9002307	105.9429961	9.1504172	132.2749954
2007	-3.6056754	120.0465780	21.7826090	141.8291870	-7.5691982	134.2599888	-27.8324027	106.4275861	9.1915576	132.8431110
2008	-3.6016299	120.9131154	21.9396435	142.8527589	-7.5261900	135.3265689	-27.8323364	107.4942325	9.2508804	133.7656257
2009	-3.6028527	121.9777488	22.1324365	144.1101853	-7.6625502	136.4476351	-27.7657858	108.6618493	9.3294915	134.9100930
2010	-3.5978298	123.4052014	22.3871702	145.7923716	-7.4699909	138.3223807	-27.8342947	110.4880860	9.4315161	136.4345473
2011	-3.5877483	123.7057184	22.4415927	146.1473111	-7.3208832	138.8264279	-27.8667900	110.9596379	9.4521698	136.7456365
2012	-3.5947698	124.2578543	22.5406669	146.7965212	-6.9979833	139.8005379	-27.9565757	111.8439622	9.4924870	137.3451101
2013	-3.5814211	129.5568771	23.4866974	153.0435745	-6.9737168	146.0698577	-27.9612444	118.1086133	9.8793040	143.0113922
2014	-3.5977706	131.4475698	23.8284314	155.2760012	-7.1210702	148.1549310	-27.9294161	120.2255149	10.0086983	145.0540387
2015	-3.5864002	131.3672017	23.8110999	155.1783016	-7.5376440	147.6406576	-27.8083906	119.8322670	10.0013171	144.9549190
2016	-3.5869275	131.3608883	23.8399031	155.2007914	-7.4646713	147.7361201	-27.8282935	119.9078266	9.9971342	144.9449500
2017	-3.5791986	135.3613967	24.5244148	159.8858115	-7.4240668	152.4617447	-27.8485476	124.6151971	10.2967372	149.2373325
2018	-3.5784839	135.0691337	24.4746030	159.5437367	-7.5720916	151.9716451	-27.8022711	124.1693740	10.2760604	148.9236780
2019	-3.5870762	135.1355622	24.4881043	159.6236665	-7.5822951	152.0413714	-27.8000583	124.2413131	10.2819410	149.0045794
2020	-3.5831076	133.3640715	24.1845612	157.5486327	-7.6983240	149.8503087	-27.7624836	122.0878251	10.1486080	147.0957871
2021	-3.5758284	133.2534463	24.1978605	157.4513068	-7.6729203	149.7783865	-27.7754795	122.0029070	10.1541559	146.9834306
2022	-3.5617830	132.9213060	24.1717819	157.0930879	-7.3912161	149.7018718	-27.8616921	121.8401797	10.1428110	146.6259000
2023	-3.5441850	132.9110590	24.1975226	157.1085166	-7.4998208	149.6087608	-27.8318270	121.7769338	10.1539146	146.6091586
2024	-3.5470258	132.3649760	24.1332091	156.4981851	-7.1560699	149.3421152	-27.9415777	121.4053375	10.1279379	146.0399397
2025	-3.5254794	132.4739863	24.1835438	156.6575301	-7.1498450	149.5076851	-27.9389074	121.5687777	10.1462488	146.1457145
2026	-3.5251365	132.4956926	24.1874265	156.6831191	-7.2066022	149.4765169	-27.9229375	121.5535794	10.1496366	146.1704657
2027	-3.5294758	132.3550459	24.1627430	156.5177889	-7.2283187	149.2894702	-27.9167911	121.3726791	10.1402999	146.0248216
2028	-3.5290751	132.5523925	24.1979265	156.7503190	-7.2047238	149.5455952	-27.9252125	121.6203827	10.1531513	146.2346189
2029	-3.5289308	132.3708621	24.1658014	156.5366635	-7.2147405	149.3219230	-27.9205053	121.4014177	10.1418295	146.0416224
2030	-3.5277217	132.5931714	24.2049094	156.7980808	-7.2299607	149.5681201	-27.9164759	121.6518442	10.1562469	146.2771400
2031	-3.5262827	132.5061917	24.1888424	156.6950341	-7.2050551	149.4899790	-27.9248280	121.5651510	10.1504240	146.1828984
2032	-3.5290732	132.3759660	24.1663963	156.5423623	-7.2151521	149.3272102	-27.9194834	121.4077268	10.1412699	146.0463091
2033	-3.5448599	132.6387428	24.2168338	156.8555766	-7.3535928	149.5019838	-27.8801849	121.6217989	10.1622774	146.3458801
2034	-3.5543145	132.4150584	24.1785248	156.935832	-7.3633575	149.2302257	-27.8791498	121.3510759	10.1463603	146.1157332
2035	-3.5168668	131.9109301	24.0814600	155.9923901	-7.7009884	148.2914017	-27.7719594	120.5194423	10.1483369	145.5761338

TABLE B-17  
Unit Variable OMP&R Component of Transportation Charge (Continued)

(in dollars per acre-foot)

Sheet 4 of 4

Calendar  Year	CALIFORNIA AQUEDUCT (continued)							
	Reach 29G		Reach 29J		Reach 31A		Reach 33A	
	Warne Powerplant		Castaic Powerplant		Las Perillas and Badger Hill Pumping Plants		Devil's Den, Bluestone, and Polonio Pass Pumping Plants and San Luis Obispo Powerplant	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]
1961	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0
1968	0	0	0	0	1.5014866	4.1182219	0	0
1969	0	0	0	0	1.2624065	3.0719381	0	0
1970	0	0	0	0	1.6309699	3.3588478	0	0
1971	0	0	0	0	1.4985537	2.7919286	0	0
1972	0	0	-2.9350830	11.7779035	1.7489056	3.2074977	0	0
1973	0	0	-6.8099448	7.5046966	1.4609575	2.9992858	0	0
1974	0	0	-7.4013274	5.8538894	1.4255635	2.8964935	0	0
1975	0	0	-6.5604921	6.6660435	1.0379624	2.5944238	0	0
1976	0	0	-6.7213324	8.0013356	1.5465478	3.2570573	0	0
1977	0	0	-30.4985994	-11.8114350	1.7573375	4.1392042	0	0
1978	0	0	-9.0130187	4.8125712	1.9022180	3.9335509	0	0
1979	0	0	-19.0478097	-0.5983441	1.5336852	4.3289836	0	0
1980	0	0	-20.5438586	0.0907947	1.5124754	3.6860982	0	0
1981	0	0	-14.1872705	6.0877312	1.5418572	4.7276922	0	0
1982	-2.1683478	17.5370975	-9.5987314	7.9383661	1.7581649	4.3360574	0	0
1983	-9.1823408	2.4667694	-36.7784964	-34.3117270	-0.1078911	1.1427436	0	0
1984	-15.1336305	0.8777448	-5.6653375	-4.7875927	0.7991110	2.6835128	0	0
1985	-14.7796535	8.9701682	-32.3307889	-23.3606207	1.2529557	3.8417830	0	0
1986	-14.3284894	25.4490168	-28.4039160	-2.9548992	2.2592345	7.1960566	0	0
1987	-14.8417287	20.9537489	-27.0537384	-6.0998995	1.9189179	6.6712977	0	0
1988	-14.6535080	19.4058160	-25.6810590	-6.2752430	1.7871190	6.2127874	0	0
1989	-14.3464845	32.2314585	-25.5072513	6.7242072	2.6260648	8.2013819	0	0
1990	-14.1759839	42.5292001	-26.0630787	16.4661214	3.5236368	9.8374021	0	0
1991	-13.7797161	20.2546746	-25.7389805	-5.4843059	0.0000000	5.2358717	0	0
1992	-13.6621170	60.9221166	-24.5246516	36.3974650	4.7650624	13.8393556	0	0
1993	-13.9560479	61.8584046	-24.9907392	36.8676654	4.8471107	14.1255733	0	0
1994	-15.4547611	83.8098591	-25.0967163	58.7131428	6.2809659	18.1204474	0	0
1995	-15.5752504	86.6423432	-25.0970877	61.5436345	6.4806744	18.6318735	0	0
1996	-15.4977647	89.7566097	-25.0756501	64.6809596	6.7178084	19.1385205	35.1890872	54.3276077
1997	-15.4735736	98.0611788	-25.0186235	73.0425553	7.2708737	20.5857309	39.2512130	59.8369439
1998	-15.5569399	98.7604749	-25.0514017	73.7090732	7.3179744	20.7475563	39.5971682	60.3447245
1999	-15.5395488	98.1398960	-25.0465243	73.0933717	7.2736672	20.6431370	39.2717419	59.9148789
2000	-15.5616132	103.3245141	-25.0514818	78.2730323	7.6203265	21.5510548	41.8179213	63.3689761
2001	-15.5404764	103.5666633	-25.0472827	78.5213806	7.6362272	21.5827705	41.9346537	63.5174242
2002	-15.5491296	104.6231399	-25.0441586	79.5789813	7.7054716	21.7707636	42.4432653	64.2140289
2003	-15.5393929	106.0895038	-25.0411273	81.0493765	7.8024863	22.0178094	43.1557756	65.1735850
2004	-15.5321254	108.9463939	-25.0398068	83.9065871	7.9920173	22.5165086	44.5479102	67.0644188
2005	-15.5437733	116.9466803	-25.04115910	91.9050893	8.5220642	23.9179752	48.4409812	72.3589564
2006	-15.5295076	116.7454878	-25.0386437	91.7068441	8.5092352	23.8684197	48.3467213	72.2151410
2007	-15.5633369	117.2804721	-25.0423995	92.2380726	8.5454107	23.9777388	48.6124053	72.5901441
2008	-15.5370281	118.2285976	-25.0363901	93.1922075	8.6074081	24.1516218	49.0677723	73.1939341
2009	-15.5493766	119.3607164	-25.0386496	94.3206699	8.6839144	24.3203040	49.6297137	73.9527477
2010	-15.5300827	120.9046466	-25.0367745	95.8676901	8.7844681	24.5958975	50.3682433	74.9641408
2011	-15.5055345	121.2401020	-25.0322508	96.2078512	8.8057817	24.6458060	50.5247851	75.1705911
2012	-15.5133494	121.8317607	-25.0338727	96.7978880	8.8451035	24.7533494	50.8136368	75.5669862
2013	-15.5118554	127.4994768	-25.0338592	102.4658176	9.2209249	25.7242256	53.5739154	79.2981410
2014	-15.5152701	129.5387686	-25.0341122	104.5046564	9.3553627	26.1000839	54.5613597	80.6614436
2015	-15.5379802	129.4169388	-25.0367958	104.3801430	9.3486227	26.0863043	54.5118321	80.5981364
2016	-15.5194366	129.4255134	-25.0344871	104.3910263	9.3439653	26.0768755	54.4776409	80.5545164
2017	-15.5424495	130.5114521	-25.0379376	108.6582567	9.6408895	26.8400318	56.6584428	83.4984746
2018	-15.5454047	133.3782733	-25.0386070	108.3366663	9.6193324	26.7826368	56.5001277	83.2827645
2019	-15.5331177	133.4714617	-25.0368547	108.4346070	9.6251379	26.7948015	56.5427745	83.3375760
2020	-15.5480686	131.5477185	-25.0388128	106.5089057	9.4936924	26.4534956	55.5773629	82.0308585
2021	-15.5418679	131.4415627	-25.0378284	106.4037343	9.4995427	26.4488547	55.6203360	82.0691943
2022	-15.5424495	130.8345055	-25.0379376	106.0455129	9.4881503	26.3959123	55.5366172	81.9325295
2023	-15.5320852	131.0770734	-25.0360713	106.0410021	9.4993936	26.4212500	55.6192010	82.0404510
2024	-15.5149837	130.5249560	-25.0351932	105.4897628	9.4716830	26.3507123	55.4155151	81.7662274
2025	-15.5154826	130.6302319	-25.0329820	105.5972499	9.4932699	26.3747285	55.5742559	81.9489844
2026	-15.5181273	130.6523384	-25.0342678	105.6180706	9.4950344	26.3772533	55.5871662	81.9644195
2027	-15.5133695	130.5114521	-25.0345508	105.4769013	9.4843826	26.3559933	55.5089521	81.8649454
2028	-15.5167372	130.7178817	-25.0334534	105.6844283	9.4995974	26.3891478	55.6207190	82.0098668
2029	-15.5134234	130.5281990	-25.0346745	105.4935245	9.4856749	26.3567061	55.5184576	81.8751637
2030	-15.5155470	130.7615930	-25.0332139	105.7283791	9.5026244	26.3958741	55.6429222	82.0387961
2031	-15.5275447	130.6553537	-25.0357525	105.6196012	9.4956955	26.3820818	55.5920750	81.9741568
2032	-15.5136368	130.5326723	-25.0342195	105.4984528	9.4859483	26.3594159	55.5205005	81.8799164
2033	-15.5183849	130.8274952	-25.0342562	105.7932390	9.5077540	26.4024964	55.6806458	82.0831422
2034	-15.5146885	130.6010447	-25.0342832	105.5667615	9.4912519	26.3674492	55.5594019	81.9268511
2035	-15.4766891	130.0994447	-25.0546938	105.0447509	9.4495790	26.2644568	55.2533269	81.5177837



TABLE B-18  
Variable OMP&R Component of Transportation Charge for Each Contractor

(in dollars)

Sheet 1 of 4

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County WA	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	2,051	34,919	0	36,970	0	0	0
1963	0	0	0	7,900	49,811	0	57,711	0	0	0
1964	0	0	0	5,931	68,203	0	74,134	0	0	0
1965	0	0	0	10,918	68,765	62,926	142,609	0	0	0
1966	0	0	0	19,330	52,135	121,140	192,605	0	0	0
1967	0	0	0	19,399	56,949	160,650	236,998	0	0	0
1968	6,989	0	6,989	29,898	120,985	341,769	492,652	0	0	0
1969	8,551	0	8,551	31,859	3,904	298,968	334,731	0	0	0
1970	13,598	0	13,598	49,688	0	431,442	481,130	0	0	0
1971	10,609	0	10,609	23,842	28,329	416,328	468,499	0	0	0
1972	14,434	0	14,434	54,839	144,669	524,207	723,715	0	0	0
1973	14,449	0	14,449	18,397	15,590	547,808	581,795	0	0	0
1974	17,473	0	17,473	9,499	29	636,187	645,715	0	0	0
1975	14,779	0	14,779	22,317	4,765	425,285	452,367	0	0	0
1976	20,856	0	20,856	97,875	121,693	502,768	722,336	0	0	0
1977	22,635	0	22,635	82,578	123,044	497,792	703,414	0	0	0
1978	21,692	0	21,692	74,911	39,986	652,861	767,758	0	0	0
1979	16,237	0	16,237	136,993	77,085	652,117	866,195	0	0	0
1980	19,945	0	19,945	98,836	64,953	518,020	681,809	0	0	0
1981	23,848	0	23,848	126,750	141,805	569,369	837,924	0	0	0
1982	12,159	0	12,159	88,254	42,476	586,837	717,567	0	0	0
1983	2,670	0	2,670	11,281	7,473	205,299	224,053	0	0	0
1984	4,507	0	4,507	25,772	12,681	334,316	372,769	0	0	0
1985	10,022	0	10,022	87,727	110,683	512,209	710,619	0	0	0
1986	15,406	0	15,406	116,769	136,250	968,578	1,221,597	0	0	0
1987	27,269	0	27,269	230,268	249,786	865,743	1,345,797	0	0	0
1988	32,447	9,404	41,851	242,334	313,956	825,241	1,381,531	0	0	0
1989	18,407	70,802	89,209	340,721	338,318	1,169,211	1,848,250	0	0	0
1990	47,545	125,958	173,503	546,010	490,136	1,520,214	2,556,360	0	0	0
1991	27,719	66,522	94,241	223,987	268,986	668,022	1,160,995	0	(19,743)	(19,743)
1992	89,707	179,956	269,663	738,347	818,335	1,968,926	3,525,608	0	131,030	131,030
1993	126,130	273,698	399,828	804,584	876,573	2,074,980	3,756,137	0	0	0
1994	128,535	224,456	352,991	1,106,991	1,162,341	2,767,479	5,036,811	0	0	0
1995	140,778	313,850	454,628	1,196,534	1,196,534	2,848,888	5,241,956	0	0	0
1996	172,325	281,378	453,703	1,293,327	1,234,511	2,939,313	5,467,151	1,358,190	2,471,145	3,829,335
1997	198,538	315,390	513,928	1,459,578	1,332,658	3,172,996	5,965,232	1,495,924	2,721,744	4,217,668
1998	212,017	328,262	540,279	1,470,368	1,342,509	3,196,450	6,009,327	1,508,618	2,744,840	4,253,458
1999	223,111	337,462	560,573	1,462,089	1,334,951	3,178,455	5,975,495	1,497,873	2,725,288	4,223,161
2000	246,682	365,354	612,036	1,529,281	1,396,299	3,324,523	6,250,103	1,584,224	2,882,401	4,466,625
2001	258,556	373,035	631,591	1,531,958	1,398,744	3,330,342	6,261,044	1,587,936	2,889,153	4,477,089
2002	272,610	383,655	656,265	1,545,524	1,411,131	3,359,835	6,316,490	1,605,351	2,920,838	4,526,189
2003	287,738	395,806	683,544	1,563,896	1,427,905	3,399,775	6,391,576	1,629,339	2,964,486	4,593,825
2004	307,011	413,366	720,377	1,600,734	1,461,541	3,479,858	6,542,133	1,676,610	3,050,492	4,727,102
2005	340,404	449,014	789,418	1,703,647	1,555,505	3,703,582	6,962,734	1,808,975	3,291,319	5,100,294
2006	351,602	448,996	800,598	1,700,483	1,552,615	3,696,702	6,949,800	1,805,379	3,284,778	5,090,157
2007	364,952	451,473	816,425	1,708,091	1,559,562	3,713,242	6,980,895	1,814,753	3,301,836	5,116,589
2008	379,575	455,534	835,109	1,719,701	1,570,162	3,738,481	7,028,344	1,829,984	3,329,548	5,159,532
2009	395,109	460,235	855,344	1,734,082	1,583,292	3,769,743	7,087,117	1,848,819	3,363,815	5,212,634
2010	412,178	466,347	878,525	1,753,958	1,601,440	3,812,952	7,168,350	1,874,103	3,409,818	5,283,921
2011	428,000	468,259	896,259	1,757,855	1,604,998	3,821,424	7,184,277	1,879,266	3,419,210	5,298,476
2012	444,874	471,125	915,999	1,765,643	1,612,109	3,838,356	7,216,108	1,889,176	3,437,239	5,326,415
2013	479,806	492,117	971,923	1,837,450	1,677,671	3,994,457	7,509,578	1,982,454	3,606,955	5,589,409
2014	503,008	499,999	1,003,007	1,864,630	1,702,488	4,053,544	7,620,662	2,016,536	3,668,967	5,685,503
2015	519,394	500,606	1,020,000	1,863,505	1,701,462	4,051,099	7,616,066	2,014,954	3,666,086	5,681,040
2016	534,945	500,631	1,035,776	1,862,558	1,700,596	4,049,039	7,612,193	2,013,863	3,664,103	5,677,966
2017	568,940	517,321	1,086,261	1,919,472	1,752,562	4,172,766	7,844,800	2,087,461	3,798,011	5,885,472
2018	585,006	516,636	1,101,642	1,915,262	1,748,718	4,163,614	7,827,594	2,082,069	3,788,200	5,870,269
2019	603,279	517,543	1,120,822	1,916,255	1,749,623	4,165,770	7,831,648	2,083,439	3,790,694	5,874,133
2020	612,854	510,925	1,123,779	1,890,948	1,726,517	4,110,754	7,728,219	2,050,771	3,731,256	5,782,027
2021	613,963	511,333	1,125,296	1,891,433	1,726,961	4,111,814	7,730,208	2,051,729	3,732,999	5,784,728
2022	613,742	510,685	1,124,427	1,888,326	1,724,124	4,105,057	7,717,507	2,048,314	3,726,783	5,775,097
2023	615,062	511,383	1,126,445	1,890,591	1,726,192	4,109,978	7,726,761	2,051,012	3,731,692	5,782,704
2024	613,893	509,811	1,123,704	1,885,534	1,721,575	4,098,986	7,706,097	2,044,157	3,719,218	5,763,375
2025	615,836	510,983	1,126,819	1,888,431	1,724,220	4,105,287	7,717,938	2,048,725	3,727,532	5,776,257
2026	615,950	511,077	1,127,027	1,888,680	1,724,446	4,105,826	7,718,952	2,049,110	3,728,233	5,777,343
2027	615,259	510,504	1,125,763	1,886,913	1,722,834	4,101,984	7,711,731	2,046,624	3,723,709	5,770,333
2028	616,246	511,323	1,127,569	1,889,588	1,725,276	4,107,801	7,722,665	2,050,246	3,730,301	5,780,547
2029	615,342	510,575	1,125,917	1,887,025	1,722,937	4,102,230	7,712,192	2,048,879	3,724,173	5,771,052
2030	616,443	511,485	1,127,928	1,890,120	1,725,762	4,108,956	7,724,838	2,050,971	3,731,616	5,782,587
2031	615,994	511,114	1,127,108	1,888,969	1,724,711	4,106,453	7,720,133	2,049,354	3,728,676	5,778,030
2032	615,361	510,589	1,125,950	1,887,184	1,723,081	4,102,573	7,712,838	2,046,998	3,724,389	5,771,387
2033	616,775	511,763	1,128,538	1,890,783	1,726,367	4,110,398	7,727,548	2,052,079	3,733,635	5,785,714
2034	615,704	510,874	1,126,578	1,887,979	1,723,807	4,104,303	7,716,089	2,048,171	3,726,525	5,774,696
2035	613,002	508,631	1,121,633	1,879,805	1,716,343	4,086,534	7,682,682	2,037,944	3,707,918	5,745,862
TOTAL	19,840,482	19,847,445	39,687,927	77,375,046	71,840,352	178,480,834	327,696,232	75,748,380	137,930,908	213,679,288

TABLE B-18  
Variable OMP&R Component of Transportation Charge for Each Contractor (Continued)

(in dollars) Sheet 2 of 4

Calendar Year	SAN JOAQUIN VALLEY AREA								
	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
				Municipal and Industrial	Agricultural				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	68,978	5,176	0	0	440,922	2,355	4,760	65,680	587,871
1969	56,774	101	0	0	321,387	181	3,338	17,956	399,737
1970	69,819	6,811	0	0	470,866	0	5,595	16,550	569,641
1971	53,097	7,747	0	0	769,055	4,785	6,353	158,419	999,456
1972	61,907	8,452	0	0	1,123,600	2,042	7,375	376,900	1,580,276
1973	33,931	4,615	0	0	764,825	2,308	3,017	77,630	886,326
1974	49,114	4,413	0	46,752	671,406	2,207	3,114	106,332	883,338
1975	63,122	4,670	0	34,574	842,482	2,490	3,920	134,257	1,085,515
1976	70,851	5,131	0	94,653	965,096	2,737	4,910	100,597	1,243,975
1977	26,565	1,758	0	84,875	498,624	3,644	2,802	43,067	661,135
1978	107,201	923	0	188,010	1,594,321	4,248	6,294	24,483	1,925,480
1979	107,742	4,861	0	193,697	2,365,059	5,591	13,137	433,610	3,123,697
1980	89,119	1,943	0	122,020	1,736,941	4,782	7,797	150,511	2,113,113
1981	130,619	18,666	0	261,567	2,404,287	7,327	8,967	265,820	3,097,253
1982	105,694	931	0	138,685	2,287,120	4,511	6,706	47,822	2,591,469
1983	53,652	0	0	14,229	927,439	4,440	3,281	1,259	1,004,300
1984	84,987	0	0	177,596	1,915,627	5,842	6,897	10,822	2,201,771
1985	119,736	13,454	0	238,301	2,666,673	8,802	9,169	284,230	3,340,365
1986	248,070	5,776	0	395,164	5,061,928	18,267	18,100	391,761	6,139,066
1987	219,979	12,000	0	575,093	4,833,185	19,010	19,452	442,371	6,121,090
1988	212,406	16,707	0	555,583	4,721,143	17,703	14,176	424,271	5,961,989
1989	317,086	16,726	0	728,123	6,778,810	22,301	24,035	712,873	8,599,954
1990	229,165	8,075	0	864,269	4,905,557	12,627	13,143	360,326	6,393,162
1991	4,854	1,157	0	329,276	0	0	0	11,414	346,701
1992	523,586	27,223	0	1,297,738	11,230,609	36,297	36,313	1,075,304	14,227,070
1993	535,367	27,835	0	1,326,298	11,468,333	37,114	36,931	1,099,498	14,531,376
1994	683,138	35,519	0	1,694,910	14,685,139	47,358	47,059	1,402,978	18,596,101
1995	701,124	36,454	0	1,739,780	15,079,479	48,605	49,137	1,439,917	19,094,496
1996	716,676	37,263	0	1,796,115	15,503,392	49,683	49,198	1,471,855	19,624,182
1997	768,267	39,945	0	1,925,898	16,640,730	53,260	52,708	1,577,810	21,058,618
1998	774,887	40,289	0	1,942,324	16,777,170	53,718	53,214	1,591,405	21,233,007
1999	771,419	40,109	0	1,933,557	16,698,840	53,478	52,970	1,584,282	21,134,655
2000	803,803	41,792	0	2,015,005	17,412,044	55,722	55,185	1,650,791	22,034,342
2001	804,715	41,840	0	2,017,354	17,434,492	55,786	55,237	1,652,665	22,062,089
2002	811,567	42,195	0	2,034,567	17,584,438	56,261	55,697	1,666,737	22,251,462
2003	820,224	42,646	0	2,056,396	17,777,414	56,862	56,264	1,684,516	22,494,322
2004	838,064	43,574	0	2,101,251	18,169,865	58,098	57,488	1,721,152	22,989,492
2005	888,344	46,188	0	2,227,686	19,276,055	61,584	60,898	1,824,416	24,385,171
2006	886,225	46,077	0	2,222,446	19,233,161	61,437	60,732	1,820,064	24,330,142
2007	890,446	46,297	0	2,232,980	19,322,773	61,729	61,037	1,828,731	24,443,993
2008	895,747	46,573	0	2,246,370	19,441,808	62,097	61,383	1,839,619	24,593,597
2009	902,378	46,917	0	2,263,105	19,590,381	62,556	61,817	1,853,236	24,780,390
2010	912,319	47,435	0	2,288,060	19,807,134	63,246	62,507	1,873,654	25,054,355
2011	913,969	47,520	0	2,292,242	19,844,881	63,360	62,614	1,877,043	25,101,629
2012	917,906	47,725	0	2,302,122	19,930,589	63,633	62,888	1,885,127	25,209,988
2013	952,240	49,510	0	2,388,607	20,692,237	66,013	65,160	1,955,642	26,169,409
2014	966,171	50,234	0	2,423,497	20,992,963	66,979	66,159	1,984,249	26,550,252
2015	965,764	50,213	0	2,422,450	20,982,937	66,951	66,138	1,983,415	26,537,868
2016	965,489	50,199	0	2,421,795	20,977,978	66,932	66,103	1,982,850	26,531,346
2017	992,390	51,597	0	2,489,437	21,571,294	68,796	67,922	2,038,099	27,279,535
2018	990,323	51,490	0	2,484,247	21,526,145	68,653	67,780	2,033,852	27,222,490
2019	990,689	51,509	0	2,485,186	21,534,928	68,678	67,801	2,034,606	27,233,397
2020	978,581	50,879	0	2,454,755	21,268,543	67,840	66,982	2,009,737	26,897,317
2021	977,976	50,848	0	2,453,211	21,256,044	67,797	66,939	2,008,493	26,881,308
2022	975,578	50,723	0	2,447,195	21,205,469	67,631	66,754	2,003,570	26,816,920
2023	976,391	50,765	0	2,449,120	21,220,113	67,687	66,837	2,005,240	26,836,153
2024	973,921	50,637	0	2,442,768	21,161,446	67,516	66,699	2,000,167	26,763,154
2025	974,060	50,644	0	2,443,175	21,168,699	67,526	66,677	2,000,453	26,771,234
2026	974,104	50,647	0	2,443,297	21,170,174	67,529	66,677	2,000,543	26,772,971
2027	973,492	50,615	0	2,441,721	21,155,126	67,487	66,646	1,999,286	26,754,373
2028	974,527	50,669	0	2,444,356	21,179,361	67,558	66,709	2,001,412	26,784,592
2029	973,458	50,613	0	2,441,654	21,155,111	67,484	66,637	1,999,217	26,754,174
2030	974,741	50,680	0	2,444,899	21,184,351	67,573	66,722	2,001,850	26,790,816
2031	974,344	50,659	0	2,443,880	21,174,611	67,546	66,701	2,001,037	26,778,778
2032	973,599	50,621	0	2,441,994	21,157,655	67,494	66,652	1,999,506	26,757,521
2033	974,826	50,684	0	2,445,159	21,188,000	67,579	66,713	2,002,027	26,794,988
2034	973,756	50,628	0	2,442,421	21,162,445	67,505	66,657	1,999,830	26,763,242
2035	970,218	50,445	0	2,433,532	21,084,642	67,259	66,378	1,992,563	26,665,037
TOTAL	41,761,277	2,187,018	0	103,227,027	899,145,352	2,874,097	2,881,856	85,117,405	1,137,194,032

TABLE B-18

## Variable OMP&amp;R Component of Transportation Charge for Each Contractor (Continued)

(in dollars)

Sheet 3 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	30,401	0	0	0	0	0	0	0	0
1969	0	30,627	0	0	0	0	0	0	0	0
1970	0	39,429	0	0	0	0	0	0	0	0
1971	0	34,871	0	0	0	0	0	0	0	0
1972	779	44,601	0	12,781	0	4,492	1,516	0	32,093	0
1973	286	28,247	102,811	6,895	159,535	3,854	0	0	301,444	0
1974	15,558	28,096	100,954	9,891	157,742	4,932	221	0	177,172	6,529
1975	99,182	27,760	108,250	12,758	170,106	6,391	0	0	136,060	53,482
1976	385,090	38,108	135,276	17,835	213,595	8,163	0	0	139,356	68,933
1977	199,168	21,006	0	23,598	0	1,973	1,702	0	239,663	86,821
1978	580,256	44,693	173,766	20,833	263,648	2,723	0	0	36,902	70,719
1979	1,058,567	82,845	228,381	28,596	340,428	2,327	90,780	0	236	3,803
1980	1,390,776	51,281	256,858	29,240	401,192	3,668	94,398	0	0	16,513
1981	1,484,942	95,112	275,149	33,754	431,871	23,759	90,921	0	294,363	66,494
1982	915,857	130,608	291,480	27,078	459,333	0	229,667	0	117,394	175,889
1983	335,575	(310,672)	171,956	10,769	271,677	388	0	0	(72,250)	(8,848)
1984	468,735	(20,758)	262,667	18,791	416,455	14	0	0	(72,793)	(100,306)
1985	797,482	(243,211)	425,705	35,632	676,562	0	0	33,522	(42,148)	(28,675)
1986	1,110,104	54,559	731,909	60,530	1,165,591	5,577	0	105,917	70,269	103,461
1987	1,028,886	(19,756)	684,159	65,104	1,109,107	32,557	599	162,156	48,212	58,565
1988	1,010,384	(46,970)	713,341	69,289	1,174,397	12,422	310	52,478	63,097	44,678
1989	1,890,031	268,153	454,009	105,608	757,613	40,517	9,733	375,922	431,363	266,494
1990	2,453,085	426,749	1,407,497	111,870	2,321,454	90,779	0	447,291	603,913	533,938
1991	705,340	(71,570)	417,763	41,594	689,039	26,320	918,716	200,172	114,824	68,894
1992	4,473,930	1,209,447	1,862,020	208,772	3,071,125	156,991	4,094,833	1,099,610	1,581,020	948,612
1993	4,752,291	1,397,872	1,885,025	223,184	3,109,068	159,321	4,145,424	1,196,991	2,159,455	971,756
1994	6,357,006	2,399,580	2,415,868	289,612	3,984,612	203,074	5,117,304	1,527,469	3,325,764	1,301,386
1995	6,864,228	2,745,450	2,498,440	305,792	4,120,802	210,179	5,143,786	1,580,922	3,349,044	1,310,495
1996	7,927,459	2,927,319	2,576,234	395,611	4,249,111	217,003	5,665,481	1,632,238	3,817,758	1,171,758
1997	8,857,168	3,292,704	2,786,091	446,376	4,585,239	234,697	6,126,985	1,765,332	4,253,070	1,333,763
1998	9,371,337	3,322,422	2,805,360	468,625	4,627,022	236,335	6,169,365	1,777,657	4,297,981	1,377,073
1999	9,767,119	3,295,541	2,789,101	484,997	4,600,206	234,983	6,133,607	1,767,481	4,269,527	1,396,990
2000	10,701,060	3,522,030	2,921,272	527,066	4,818,203	246,125	6,424,272	1,851,283	4,544,270	1,517,785
2001	11,151,868	3,532,739	2,927,233	547,420	4,828,033	246,625	6,437,379	1,855,051	4,570,945	1,557,778
2002	11,687,747	3,579,016	2,954,122	570,837	4,872,382	248,906	6,496,510	1,872,203	4,633,010	1,610,433
2003	12,276,964	3,643,133	2,991,994	596,959	4,934,850	252,116	6,579,800	1,896,352	4,719,027	1,672,423
2004	13,020,804	3,768,084	3,063,842	628,501	5,053,353	258,168	6,737,804	1,941,867	5,250,224	1,755,908
2005	14,366,703	4,117,817	3,267,405	691,000	5,389,097	275,362	7,185,463	2,071,200	6,140,466	1,948,010
2006	14,342,922	4,108,962	3,262,096	703,480	5,380,339	274,905	7,173,784	2,067,772	6,568,465	1,985,371
2007	14,405,591	4,132,396	3,276,254	717,216	5,403,692	276,107	7,204,924	2,076,806	7,024,220	2,030,630
2008	14,509,574	4,179,948	3,299,898	734,551	5,442,691	278,101	7,256,820	2,091,798	7,524,596	2,087,538
2009	14,637,330	4,223,267	3,328,946	752,373	5,490,599	280,549	7,320,798	2,110,215	8,040,976	2,147,159
2010	14,808,624	4,290,878	3,367,804	774,606	5,554,688	283,833	7,406,252	2,134,911	8,618,071	2,220,811
2011	14,844,562	4,305,628	3,376,002	782,980	5,568,214	284,522	7,424,283	2,140,108	9,098,691	2,270,234
2012	14,910,942	4,331,479	3,391,045	794,067	5,593,023	285,793	7,457,365	2,149,681	9,618,579	2,328,592
2013	15,546,825	4,579,022	3,535,307	835,520	5,830,961	297,982	7,774,613	2,241,333	10,629,775	2,501,542
2014	15,773,709	4,668,414	3,586,875	853,373	5,916,016	302,329	7,888,020	2,274,043	11,060,748	2,589,656
2015	15,764,064	4,663,072	3,584,619	856,315	5,912,293	302,143	7,883,057	2,272,651	11,264,232	2,624,326
2016	15,763,307	4,663,404	3,585,140	856,870	5,913,150	302,130	7,884,200	2,272,542	11,511,151	2,666,751
2017	16,243,368	4,850,187	3,693,362	884,279	6,091,649	311,333	8,122,199	2,341,752	12,212,290	2,813,810
2018	16,208,296	4,836,237	3,685,459	881,436	6,078,616	310,659	8,104,822	2,336,697	12,416,937	2,845,963
2019	16,216,267	4,840,332	3,687,306	881,840	6,081,662	310,811	8,108,883	2,337,845	12,483,768	2,889,853
2020	16,003,687	4,756,078	3,639,372	869,132	6,002,604	306,738	8,003,471	2,307,198	12,325,987	2,881,273
2021	16,480,786	4,751,654	3,637,128	868,715	5,998,894	306,484	7,998,528	2,305,285	12,375,974	2,920,748
2022	16,928,857	4,736,118	3,628,849	868,271	5,985,247	305,719	7,980,329	2,299,540	12,417,950	2,958,280
2023	17,416,684	4,736,251	3,629,208	867,731	5,985,836	305,695	7,981,116	2,299,362	12,489,857	2,998,147
2024	17,832,211	4,712,478	3,615,108	866,184	5,962,580	304,440	7,950,108	2,289,913	12,455,694	3,030,157
2025	18,334,401	4,717,243	3,618,769	867,145	5,968,651	304,691	7,958,203	2,291,800	12,472,957	3,075,691
2026	18,337,404	4,718,142	3,619,380	866,964	5,969,626	304,741	7,959,502	2,292,175	12,471,398	3,116,634
2027	18,317,939	4,712,011	3,615,562	865,879	5,963,328	304,416	7,951,104	2,289,742	12,452,836	3,153,262
2028	18,345,252	4,721,047	3,620,932	867,364	5,972,186	304,870	7,962,916	2,293,157	12,478,252	3,201,049
2029	18,320,128	4,712,711	3,615,997	866,087	5,964,047	304,454	7,952,063	2,290,016	12,455,787	3,236,561
2030	18,350,895	4,722,955	3,622,035	867,494	5,974,007	304,964	7,965,344	2,293,861	12,481,460	3,284,596
2031	18,338,856	4,718,266	3,619,654	867,042	5,970,080	304,765	7,960,108	2,292,357	12,472,584	3,326,024
2032	18,320,834	4,712,951	3,616,129	866,096	5,964,263	304,464	7,952,351	2,290,104	12,456,433	3,365,423
2033	18,357,202	4,725,730	3,623,363	867,112	5,976,197	305,069	7,968,263	2,294,651	12,478,396	3,415,139
2034	18,326,244	4,715,887	3,617,311	865,535	5,966,216	304,555	7,954,954	2,290,780	12,450,620	3,451,224
2035	18,256,473	4,692,915	3,603,425	860,089	5,943,310	303,394	7,924,412	2,282,059	12,365,296	3,470,960
TOTAL	647,613,781	181,745,026	151,288,291	32,302,924	249,257,315	12,431,397	318,329,468	92,763,246	396,684,811	106,248,496

Note: As of January 1, 1992, Castaic Lake Water Agency will assume all rights and obligations granted to Devil's Den Water District according to its long-term water supply contract with the state of California.



TABLE B-18

## Variable OMP&amp;R Component of Transportation Charge for Each Contractor (Continued)

(in dollars)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Geronio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	36,970
1963	0	0	0	0	0	0	0	0	0	57,711
1964	0	0	0	0	0	0	0	0	0	74,134
1965	0	0	0	0	0	0	0	0	0	142,609
1966	0	0	0	0	0	0	0	0	0	192,605
1967	0	0	0	0	0	0	0	0	0	236,998
1968	0	0	0	30,401	0	0	0	0	0	1,117,913
1969	0	0	0	30,627	0	0	0	0	0	773,646
1970	0	0	0	39,429	0	0	0	0	0	1,103,798
1971	0	0	0	34,871	0	0	0	0	0	1,513,435
1972	0	847,235	0	943,497	0	0	0	0	0	3,261,922
1973	0	1,083,333	0	1,686,405	0	0	0	0	0	3,168,975
1974	0	1,872,299	0	2,373,394	0	0	0	0	0	3,919,920
1975	0	3,886,921	0	4,500,910	0	0	0	0	0	6,053,571
1976	0	5,485,263	0	6,491,619	0	0	0	0	0	8,478,786
1977	0	(796,688)	0	(222,757)	0	0	0	0	0	1,164,427
1978	0	3,678,838	0	4,872,378	0	0	0	0	0	7,587,308
1979	0	4,019,308	0	5,855,271	0	0	0	0	0	9,861,400
1980	0	5,367,081	0	7,611,007	0	0	0	0	0	10,425,874
1981	0	11,077,690	0	13,874,055	0	0	0	0	0	17,833,080
1982	0	7,261,844	0	9,609,150	0	0	0	0	0	12,930,345
1983	0	(8,543,159)	0	(8,144,364)	0	0	0	0	0	(6,913,341)
1984	0	(4,997,449)	0	(4,026,644)	0	0	0	0	0	(1,447,597)
1985	0	(12,150,674)	0	(10,496,805)	0	0	0	0	0	(6,434,799)
1986	0	1,105,050	0	4,512,967	0	0	0	0	0	11,889,036
1987	0	(2,432,081)	0	737,508	0	0	0	0	0	8,231,664
1988	0	(2,610,215)	0	483,209	0	0	0	0	0	7,868,580
1989	0	15,730,509	0	20,327,952	0	0	0	0	0	30,865,365
1990	0	31,089,842	205,673	39,692,091	0	0	0	0	0	48,815,116
1991	0	60,027	63,073	3,234,192	0	0	0	0	0	4,816,386
1992	0	74,712,941	304,611	93,723,912	0	0	0	0	0	111,877,283
1993	0	79,739,513	309,293	100,049,193	0	0	0	0	0	118,736,534
1994	0	118,908,202	419,050	146,248,927	0	0	0	0	0	170,234,830
1995	0	121,885,362	433,211	150,467,711	0	0	0	0	0	175,258,791
1996	0	140,010,434	1,050,995	171,487,931	0	0	0	0	0	200,862,302
1997	0	157,162,568	1,223,118	192,077,111	0	0	0	0	0	223,832,557
1998	0	158,746,543	1,273,529	194,473,249	0	0	0	0	0	226,509,320
1999	0	157,564,432	1,302,495	193,606,479	0	0	0	0	0	225,500,363
2000	1,572,317	168,294,999	1,432,407	208,373,089	0	0	0	0	0	241,736,195
2001	1,581,545	169,105,904	1,471,749	209,814,269	0	0	0	0	0	243,246,082
2002	1,603,021	171,427,692	1,525,967	213,081,846	0	0	0	0	0	246,832,252
2003	1,632,783	174,647,533	1,588,525	217,432,459	0	0	0	0	0	251,595,726
2004	1,682,017	180,367,808	1,678,260	225,206,440	0	0	0	0	0	260,185,544
2005	1,831,553	197,112,890	1,869,752	246,266,718	0	0	0	0	0	283,504,335
2006	1,832,814	197,012,694	1,884,845	246,598,449	0	0	0	0	0	283,769,146
2007	1,841,197	198,025,235	1,914,148	248,328,424	0	0	0	0	0	285,686,326
2008	1,859,652	200,063,316	1,951,902	251,274,485	0	0	0	0	0	288,891,067
2009	1,879,850	202,369,524	1,993,492	254,575,078	0	0	0	0	0	292,510,563
2010	1,911,445	205,777,181	2,042,536	259,191,640	0	0	0	0	0	297,576,791
2011	1,919,602	206,604,254	2,049,319	260,668,399	0	0	0	0	0	299,149,040
2012	1,934,901	208,109,319	2,061,128	262,965,894	0	0	0	0	0	301,634,404
2013	2,043,278	220,127,654	2,174,482	278,118,294	0	0	0	0	0	318,358,613
2014	2,079,901	224,302,532	2,215,263	283,510,879	0	0	0	0	0	324,370,303
2015	2,073,097	223,756,445	2,212,785	283,169,099	0	0	0	0	0	324,024,073
2016	2,074,404	223,848,371	2,212,993	283,554,413	0	0	0	0	0	324,411,694
2017	2,155,843	232,887,847	2,296,352	294,906,271	0	0	0	0	0	337,002,339
2018	2,148,132	232,109,247	2,281,986	294,254,487	0	0	0	0	0	336,276,482
2019	2,149,374	232,276,978	2,293,876	294,557,795	0	0	0	0	0	336,617,795
2020	2,112,119	228,162,370	2,255,373	289,625,402	0	0	0	0	0	331,156,744
2021	2,110,650	227,972,496	2,253,264	289,980,604	0	0	0	0	0	331,502,144
2022	2,107,837	227,465,800	2,246,099	289,928,896	0	0	0	0	0	331,362,847
2023	2,106,741	227,391,252	2,246,000	290,433,962	0	0	0	0	0	331,906,025
2024	2,100,229	226,477,334	2,234,971	289,831,407	0	0	0	0	0	331,187,737
2025	2,103,140	226,756,827	2,237,110	290,706,648	0	0	0	0	0	332,098,896
2026	2,102,876	226,759,014	2,237,533	290,755,389	0	0	0	0	0	332,151,682
2027	2,099,747	226,433,064	2,234,712	290,393,602	0	0	0	0	0	331,755,802
2028	2,104,033	226,892,932	2,238,855	291,002,845	0	0	0	0	0	332,418,218
2029	2,100,244	226,479,617	2,235,048	290,532,738	0	0	0	0	0	331,896,073
2030	2,104,573	226,967,219	2,239,734	291,179,137	0	0	0	0	0	332,605,306
2031	2,103,077	226,772,445	2,237,570	290,982,828	0	0	0	0	0	332,386,877
2032	2,100,354	226,491,001	2,235,138	290,675,541	0	0	0	0	0	332,043,237
2033	2,104,058	226,994,529	2,241,036	291,350,745	0	0	0	0	0	332,787,533
2034	2,099,373	226,492,740	2,236,507	290,771,946	0	0	0	0	0	332,152,551
2035	2,084,986	225,108,836	2,226,169	289,122,324	0	0	0	0	0	330,337,538
TOTAL	71,450,763	8,767,608,868	81,583,932	11,109,308,318	0	0	0	0	0	12,827,565,797

TABLE B-19  
Total Transportation Charge for Each Contractor

(in dollars)

Sheet 1 of 4

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County WA	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	11,750	43,787	0	55,537	0	0	0
1963	0	0	0	152,813	192,136	455,508	800,457	0	0	0
1964	0	0	0	173,382	280,386	631,845	1,085,613	9,067	17,954	27,021
1965	0	0	0	248,951	408,713	1,174,620	1,832,284	14,937	28,951	43,888
1966	18,399	0	18,399	275,395	426,616	1,432,330	2,134,341	24,387	46,596	70,983
1967	42,294	0	42,294	351,220	506,990	1,704,741	2,562,951	43,009	81,124	124,133
1968	130,656	0	130,656	397,010	609,540	2,008,470	3,015,020	69,361	129,923	199,284
1969	257,459	0	257,459	452,634	545,978	2,108,166	3,106,778	124,500	231,781	356,281
1970	280,354	0	280,354	466,610	539,450	2,228,315	3,234,375	137,623	256,079	393,702
1971	230,317	0	230,317	427,576	559,047	2,195,560	3,182,183	138,815	258,361	397,176
1972	227,843	0	227,843	514,007	685,467	2,346,154	3,545,628	145,067	270,012	415,079
1973	223,973	32,062	256,035	478,533	556,351	2,364,408	3,399,292	142,147	264,677	406,824
1974	243,427	33,660	277,087	501,874	571,562	2,532,180	3,805,616	143,499	267,221	410,720
1975	240,526	37,068	277,594	550,248	612,719	2,435,805	3,598,772	159,917	297,553	457,470
1976	274,435	41,687	316,122	640,559	741,814	2,526,422	3,908,795	272,084	504,693	776,777
1977	296,818	46,017	342,835	603,870	720,627	2,502,497	3,826,994	282,908	525,116	808,024
1978	277,115	50,165	327,280	657,986	699,855	2,812,107	4,169,748	290,845	539,925	830,770
1979	292,782	54,395	347,177	721,440	743,420	2,839,332	4,304,192	289,857	538,222	828,079
1980	314,309	69,040	383,349	838,234	873,598	3,055,065	4,766,897	316,380	587,286	903,666
1981	350,913	89,021	439,934	800,088	886,199	2,943,887	4,629,974	338,523	628,231	966,754
1982	472,355	108,850	581,205	837,668	860,681	3,244,483	4,942,832	339,669	630,461	970,130
1983	361,586	153,916	515,502	860,794	920,849	3,924,681	5,706,324	365,609	678,360	1,043,969
1984	478,635	228,096	706,731	1,138,246	1,105,569	5,752,243	7,996,058	398,276	738,680	1,136,956
1985	738,960	370,446	1,109,406	1,608,366	1,822,250	6,671,878	10,102,494	449,206	832,697	1,281,903
1986	1,094,650	703,989	1,798,639	1,426,674	1,558,453	6,975,878	9,961,005	434,288	805,310	1,239,598
1987	1,790,845	1,584,782	3,375,627	1,923,356	2,044,399	6,778,535	10,746,290	441,241	857,939	1,299,180
1988	2,256,748	2,366,888	4,623,636	1,910,957	2,228,438	6,425,027	10,564,422	486,777	994,831	1,481,608
1989	2,462,486	3,421,318	5,883,804	1,915,629	1,986,120	6,335,684	10,237,433	498,610	1,158,243	1,656,853
1990	2,721,280	3,437,966	6,159,246	2,316,898	2,314,179	6,957,372	11,588,449	575,588	1,190,345	1,765,933
1991	2,630,840	3,778,249	6,409,089	2,157,287	2,470,029	6,547,002	11,174,318	708,034	1,630,742	2,338,776
1992	2,839,966	4,092,814	6,932,780	2,838,244	3,063,630	8,128,800	14,030,674	857,319	2,206,037	3,063,356
1993	2,925,959	4,224,982	7,150,941	2,922,606	3,111,158	8,266,025	14,299,789	1,241,132	2,481,619	3,722,751
1994	2,864,875	4,108,014	6,972,889	3,241,284	3,381,344	8,903,451	15,526,079	2,736,152	5,420,896	8,157,048
1995	2,889,951	4,259,841	7,149,792	3,340,057	3,393,542	8,928,645	15,662,244	4,568,650	9,291,041	13,859,691
1996	2,937,391	4,209,760	7,147,151	3,455,367	3,421,078	8,995,637	15,872,122	9,302,391	18,928,499	28,230,890
1997	2,970,266	4,249,780	7,220,046	3,645,637	3,514,944	9,219,537	16,380,118	9,560,809	19,476,405	28,037,214
1998	2,987,436	4,263,348	7,250,784	3,640,529	3,510,286	9,208,437	16,359,252	9,552,937	19,462,189	28,015,126
1999	2,999,853	4,269,560	7,269,413	3,605,739	3,478,522	9,132,807	16,217,068	9,503,331	19,371,907	28,875,238
2000	3,019,943	4,287,596	7,307,539	3,621,758	3,493,152	9,187,665	16,282,575	9,514,822	19,393,043	28,907,865
2001	3,035,151	4,295,297	7,330,448	3,618,682	3,488,518	9,156,634	16,261,834	9,507,180	19,379,147	28,886,327
2002	3,048,456	4,300,028	7,348,484	3,603,312	3,476,313	9,127,585	16,207,210	9,485,152	19,339,115	28,824,267
2003	3,062,507	4,306,294	7,368,801	3,595,253	3,468,955	9,110,074	16,174,282	9,470,446	19,312,424	28,782,870
2004	3,080,137	4,317,697	7,397,834	3,604,750	3,477,632	9,130,747	16,213,129	9,477,725	19,325,789	28,803,514
2005	3,108,149	4,342,842	7,450,991	3,664,915	3,532,573	9,261,602	16,459,090	9,547,642	19,453,349	29,000,991
2006	3,119,969	4,339,169	7,459,138	3,650,325	3,519,250	9,229,883	16,399,458	9,527,300	19,416,326	28,943,626
2007	3,130,021	4,333,203	7,463,224	3,631,393	3,501,964	9,188,729	16,322,086	9,497,797	19,362,678	28,860,475
2008	3,141,001	4,328,933	7,469,934	3,616,637	3,488,495	9,156,663	16,261,795	9,474,420	19,320,181	28,794,601
2009	3,152,229	4,325,014	7,477,243	3,603,687	3,476,670	9,128,517	16,208,874	9,453,235	19,281,679	28,734,914
2010	3,161,928	4,319,410	7,481,338	3,586,561	3,461,037	9,091,300	16,138,898	9,424,335	19,229,172	28,653,507
2011	3,176,319	4,316,528	7,492,847	3,575,379	3,450,825	9,066,992	16,093,196	9,407,406	19,198,384	28,605,790
2012	3,187,398	4,310,078	7,497,476	3,554,101	3,431,399	9,020,743	16,006,243	9,374,744	19,138,975	28,513,719
2013	3,167,903	4,270,392	7,438,295	3,324,025	3,216,731	8,393,089	14,933,845	9,191,005	18,804,521	27,995,526
2014	3,209,134	4,296,718	7,505,852	3,370,784	3,225,791	8,404,676	15,001,251	9,297,218	18,996,808	28,294,026
2015	3,202,749	4,273,015	7,475,764	3,256,697	3,066,325	7,865,017	14,188,039	9,180,681	18,784,451	27,965,132
2016	3,193,061	4,266,041	7,459,102	3,214,391	3,014,001	7,638,386	13,866,778	9,137,904	18,706,166	27,844,070
2017	3,198,931	4,278,741	7,477,672	3,225,741	3,022,540	7,615,553	13,863,834	9,172,512	18,768,682	27,941,194
2018	3,133,833	4,277,995	7,411,828	3,179,312	2,977,063	7,482,031	13,638,406	9,152,535	18,731,765	27,884,300
2019	3,107,727	4,278,924	7,386,651	3,141,567	2,941,958	7,380,818	13,464,343	9,150,112	18,727,130	27,877,242
2020	3,113,388	4,271,918	7,385,306	3,102,011	2,903,545	7,285,897	13,291,453	9,115,151	18,663,297	27,778,448
2021	3,112,271	4,272,350	7,384,621	3,099,468	2,900,842	7,279,986	13,280,296	9,114,785	18,662,518	27,777,303
2022	3,110,659	4,271,675	7,382,334	3,095,735	2,897,063	7,268,879	13,261,677	9,110,315	18,654,232	27,764,547
2023	3,110,988	4,240,352	7,351,340	3,097,395	2,898,499	7,270,581	13,266,475	9,112,535	18,658,212	27,770,747
2024	3,111,014	4,240,802	7,351,816	3,103,105	2,903,580	7,282,131	13,288,816	9,121,812	18,675,015	27,796,827
2025	3,095,928	4,231,074	7,327,002	3,082,079	2,883,864	7,234,412	13,200,355	9,092,013	18,620,751	27,712,764
2026	3,091,291	4,226,554	7,317,845	3,081,464	2,883,272	7,232,812	13,197,548	8,982,638	18,418,759	27,401,397
2027	3,087,596	4,221,619	7,309,215	3,077,926	2,879,856	7,223,270	13,181,052	8,977,309	18,408,525	27,385,834
2028	3,085,282	4,218,335	7,303,617	3,078,224	2,879,977	7,222,221	13,180,422	8,974,229	18,402,600	27,376,829
2029	3,080,771	4,213,315	7,294,086	3,071,958	2,874,208	7,207,561	13,153,727	8,968,599	18,392,168	27,360,767
2030	3,071,994	4,199,633	7,271,627	3,072,718	2,874,827	7,208,601	13,156,146	8,970,065	18,394,647	27,364,712
2031	3,057,847	4,179,260	7,237,107	3,064,596	2,867,332	7,190,314	13,122,242	8,958,794	18,373,793	27,332,587
2032	3,045,420	4,158,875	7,204,295	3,064,548	2,867,239	7,189,811	13,121,598	8,960,133	18,376,204	27,336,337
2033	3,018,554	4,115,049	7,133,603	3,068,005	2,870,352	7,196,984	13,135,341	8,967,579	18,389,784	27,357,363
2034	2,952,524	4,039,931	6,992,455	3,058,204	2,861,160	7,173,843	13,093,207	8,962,061	18,379,632	27,341,693
2035	2,819,572	3,895,212	6,714,784	3,042,064	2,846,355	7,137,753	13,026,172	8,949,950	18,357,465	27,307,415
TOTAL	153,727,347	203,345,583	357,072,930	170,946,288	168,212,689	459,915,134	799,074,111	386,745,084	790,127,693	1,176,872,777

TABLE B-19  
Total Transportation Charge for Each Contractor (Continued)

Calendar Year	(in dollars)									Sheet 2 of 4	
	SAN JOAQUIN VALLEY AREA										
	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total		
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]		
1961	0	0	0	0	0	0	0	0	0		
1962	0	0	0	0	0	0	0	0	0		
1963	0	0	0	0	0	0	0	0	0		
1964	0	0	2,772	0	0	0	0	0	2,772		
1965	0	0	6,131	74,855	0	0	0	0	80,986		
1966	0	0	12,239	139,659	0	0	0	0	151,898		
1967	0	0	26,890	272,072	0	0	0	0	298,962		
1968	182,696	9,599	55,392	451,817	1,540,836	13,018	11,640	208,104	2,473,102		
1969	178,298	9,719	88,519	532,450	2,384,802	11,639	10,648	354,032	3,570,107		
1970	200,132	16,484	95,646	581,891	2,906,028	11,771	13,186	291,487	4,116,625		
1971	196,117	17,443	96,688	614,140	3,811,635	16,721	14,492	446,467	5,213,703		
1972	217,945	18,247	99,802	640,029	4,948,227	14,150	20,843	1,071,604	7,030,847		
1973	200,724	14,382	98,585	647,738	4,901,375	14,416	11,805	406,455	6,295,480		
1974	279,182	14,351	99,557	706,769	5,200,373	14,509	12,897	593,527	6,921,165		
1975	345,372	15,293	107,727	724,163	6,319,475	15,519	14,584	723,435	8,265,568		
1976	301,501	15,839	109,149	782,887	6,675,359	15,889	16,270	561,117	8,478,011		
1977	263,615	12,953	113,623	806,625	6,851,137	17,340	14,050	508,310	8,587,653		
1978	350,417	11,808	116,675	896,960	8,277,169	17,646	18,088	501,167	10,189,930		
1979	381,233	15,679	115,454	904,574	9,416,005	18,982	24,988	949,141	11,826,056		
1980	402,673	14,048	127,151	898,098	9,982,693	19,558	24,487	721,570	12,190,278		
1981	466,829	32,019	134,736	1,086,623	11,417,504	23,777	23,142	907,618	14,092,248		
1982	459,028	15,103	137,083	1,010,952	12,206,892	21,787	22,565	745,553	14,618,963		
1983	626,608	16,678	150,881	1,039,040	15,485,112	37,584	31,115	429,952	17,816,970		
1984	913,421	17,311	166,351	2,040,377	23,581,860	53,382	59,827	792,480	27,625,009		
1985	1,123,861	91,358	190,579	2,407,856	28,525,814	69,917	72,647	2,231,109	34,713,141		
1986	1,279,924	36,860	183,236	2,411,022	31,168,403	80,947	78,370	2,215,940	37,454,702		
1987	1,168,351	55,514	184,939	2,929,667	30,304,003	80,836	79,813	2,342,450	37,145,373		
1988	1,142,122	65,985	196,386	2,821,736	29,931,788	75,680	63,249	2,277,197	36,574,143		
1989	1,224,132	55,825	190,831	2,629,499	31,134,438	72,502	75,347	2,619,588	38,002,162		
1990	1,059,660	38,077	218,861	3,092,447	27,696,017	52,332	52,976	1,934,607	34,144,977		
1991	618,398	25,882	270,252	2,531,648	18,576,031	27,432	27,771	1,305,223	23,382,637		
1992	1,495,708	68,446	304,472	3,643,026	39,659,387	89,929	88,365	3,054,070	48,403,403		
1993	1,508,316	69,030	297,006	3,706,642	39,840,418	91,223	89,335	3,078,546	48,680,516		
1994	1,647,938	76,273	284,812	4,064,045	41,612,959	101,387	99,229	3,364,908	51,251,551		
1995	1,652,770	76,517	299,639	4,078,577	41,529,629	101,760	100,711	3,374,698	51,214,301		
1996	1,662,388	77,013	300,619	4,124,673	41,869,821	102,397	99,954	3,394,331	51,631,176		
1997	1,711,865	79,583	301,049	4,249,100	42,966,171	105,812	103,295	3,495,933	53,012,808		
1998	1,711,137	79,544	301,080	4,247,000	42,939,691	105,759	103,303	3,494,433	52,981,947		
1999	1,695,266	78,719	301,065	4,206,986	42,585,456	104,660	102,224	3,461,841	52,536,217		
2000	1,703,872	79,166	301,203	4,228,480	42,772,148	105,251	102,826	3,479,492	52,772,438		
2001	1,701,163	79,026	301,210	4,221,704	42,714,211	105,063	102,634	3,473,930	52,698,941		
2002	1,695,459	78,726	301,238	4,207,265	42,585,451	104,666	102,245	3,462,208	52,537,258		
2003	1,691,796	78,538	301,277	4,198,048	42,505,219	104,412	101,979	3,454,687	52,435,958		
2004	1,696,935	78,807	301,355	4,210,875	42,616,466	104,764	102,340	3,465,225	52,576,767		
2005	1,727,448	80,390	301,571	4,287,449	43,286,413	106,869	104,399	3,527,854	53,422,391		
2006	1,719,978	80,002	301,564	4,268,730	43,124,511	106,353	103,874	3,512,515	53,217,527		
2007	1,711,816	79,576	301,581	4,248,055	42,939,107	105,785	103,343	3,495,750	52,985,013		
2008	1,704,820	79,212	301,606	4,230,447	42,785,121	105,299	102,859	3,481,376	52,790,740		
2009	1,698,705	78,895	301,635	4,215,054	42,650,831	104,875	102,431	3,468,812	52,621,238		
2010	1,691,396	78,514	301,678	4,196,535	42,484,799	104,367	101,956	3,453,803	52,413,048		
2011	1,686,006	78,234	301,687	4,182,974	42,366,168	103,993	101,587	3,442,732	52,263,381		
2012	1,676,380	77,733	301,700	4,158,665	42,150,589	103,324	100,944	3,422,951	51,992,286		
2013	1,622,465	74,931	301,854	4,022,733	40,952,917	99,581	97,259	3,312,210	50,483,950		
2014	1,662,336	77,001	299,138	4,122,979	41,831,049	102,341	100,001	3,394,077	51,588,922		
2015	1,627,142	75,171	295,777	3,959,412	41,047,721	99,901	97,636	3,321,800	50,524,560		
2016	1,616,583	74,622	289,667	3,868,042	40,814,206	99,170	96,908	3,300,119	50,159,317		
2017	1,637,067	75,686	275,337	3,787,066	41,266,546	100,583	98,285	3,342,164	50,582,734		
2018	1,634,981	75,579	252,265	3,662,793	41,220,897	91,783	98,143	3,337,884	50,374,325		
2019	1,635,359	75,598	243,660	3,602,979	41,229,971	91,294	98,164	3,338,664	50,315,689		
2020	1,623,137	74,961	241,771	3,538,953	40,960,302	90,196	97,343	3,313,571	49,940,234		
2021	1,622,539	74,930	240,649	3,515,157	40,947,951	90,008	97,300	3,312,341	49,900,875		
2022	1,620,130	74,805	240,015	3,498,883	40,897,012	89,773	97,114	3,307,395	49,825,127		
2023	1,620,963	74,847	239,586	3,496,387	40,912,124	89,799	97,198	3,309,105	49,840,009		
2024	1,623,767	74,995	239,048	3,501,155	40,970,542	89,977	97,417	3,314,867	49,911,768		
2025	1,613,105	74,440	238,484	3,471,846	40,737,785	89,212	96,667	3,292,971	49,614,510		
2026	1,613,150	74,443	238,212	3,469,892	40,739,285	89,179	96,667	3,293,062	49,613,890		
2027	1,612,531	74,411	237,555	3,485,262	40,724,021	89,093	96,636	3,291,792	49,591,301		
2028	1,613,579	74,465	235,087	3,465,841	40,746,594	89,142	96,699	3,293,941	49,617,348		
2029	1,612,496	74,409	234,762	3,459,964	40,724,014	89,004	96,627	3,291,722	49,582,998		
2030	1,613,794	74,476	234,475	3,460,111	40,753,651	89,026	96,712	3,294,383	49,616,628		
2031	1,613,394	74,455	232,860	3,440,445	40,743,773	88,601	96,691	3,293,562	49,583,781		
2032	1,612,638	74,417	232,833	3,440,756	40,726,588	88,559	96,642	3,292,014	49,564,447		
2033	1,613,880	74,480	232,548	3,439,228	40,757,361	88,515	96,703	3,294,563	49,597,278		
2034	1,612,799	74,424	231,925	3,429,875	40,731,458	88,290	96,647	3,292,342	49,557,760		
2035	1,609,225	74,241	231,159	3,411,577	40,652,587	87,805	96,367	3,285,001	49,447,962		
TOTAL	86,060,441	3,990,188	15,443,649	203,381,260	2,162,317,897	5,075,914	5,150,459	173,117,778	2,654,537,586		

TABLE B-19  
Total Transportation Charge for Each Contractor (Continued)

(in dollars)

Sheet 3 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley- East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline - Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	33,938	0	0	0	0	0	0	0	52,694	0
1964	63,968	27,939	14,690	4,450	37,841	1,164	28,956	8,354	84,285	35,635
1965	120,616	53,917	25,533	7,320	41,467	2,119	51,194	15,485	137,397	35,953
1966	219,384	102,964	45,489	12,691	74,379	3,817	91,931	28,146	236,425	62,500
1967	424,383	214,306	87,555	23,864	143,754	7,406	178,096	54,921	440,559	117,495
1968	747,058	485,048	155,023	42,148	255,022	13,065	315,436	96,907	794,222	212,139
1969	1,074,996	734,534	228,767	62,171	376,637	18,978	465,130	140,158	1,224,544	326,737
1970	1,397,865	916,973	320,130	91,093	527,319	25,615	641,744	187,654	1,805,979	474,863
1971	1,729,404	1,103,489	439,124	130,337	723,565	32,310	868,797	234,711	2,577,508	669,584
1972	2,048,336	1,321,015	569,101	183,458	937,930	42,916	1,124,386	278,321	3,434,788	876,921
1973	2,139,339	1,339,485	703,885	186,045	1,149,866	44,013	1,187,767	291,148	4,019,851	959,092
1974	2,203,158	1,399,497	719,324	195,684	1,176,925	45,748	1,219,729	295,940	4,048,288	1,003,377
1975	2,380,077	1,467,559	760,440	208,507	1,245,069	49,033	1,286,718	308,199	4,210,213	1,104,199
1976	2,733,325	1,463,634	807,144	217,593	1,321,005	52,009	1,329,418	317,632	4,351,988	1,158,498
1977	2,676,318	1,533,106	703,092	228,579	1,158,914	47,897	1,401,196	333,354	4,607,140	1,222,879
1978	2,992,448	1,617,300	883,782	233,556	1,433,980	47,664	1,400,981	325,677	4,513,724	1,225,758
1979	3,547,177	1,651,973	951,702	240,528	1,532,698	48,953	1,528,206	336,500	4,476,436	1,166,385
1980	4,095,650	1,735,515	1,041,392	262,048	1,694,418	53,924	1,647,692	364,633	4,890,737	1,283,610
1981	4,426,102	1,960,621	1,111,965	274,255	1,811,317	78,203	1,764,128	395,566	5,323,971	1,381,093
1982	3,993,759	2,087,159	1,167,321	284,018	1,903,141	56,817	1,971,238	413,084	5,480,950	1,571,743
1983	5,187,557	2,357,871	1,756,361	336,466	2,845,705	70,139	2,042,458	500,180	6,091,215	1,574,877
1984	7,173,722	3,501,165	2,820,493	445,957	4,543,250	76,064	2,259,308	555,348	7,075,586	2,331,211
1985	9,028,876	3,833,570	3,664,793	549,265	5,896,001	81,515	2,420,720	750,670	7,891,799	2,421,239
1986	8,817,889	4,336,522	4,058,564	579,932	6,532,423	102,918	2,474,557	1,004,118	7,905,206	3,061,212
1987	8,911,683	4,233,948	3,932,506	610,302	6,411,125	213,337	2,528,726	1,042,776	9,258,616	3,062,195
1988	8,342,047	4,273,070	3,926,503	620,508	6,467,375	128,973	2,586,547	803,752	9,500,052	2,840,007
1989	9,264,177	4,450,554	3,283,109	621,826	5,453,557	181,946	2,526,025	1,529,849	9,311,096	3,129,495
1990	10,243,785	4,686,169	4,390,941	623,058	7,241,366	284,232	2,631,493	1,611,362	9,673,795	3,759,049
1991	8,729,499	4,434,207	3,418,964	618,046	5,638,218	221,014	2,241,279	1,653,320	10,574,443	3,504,889
1992	13,601,957	6,395,129	4,895,281	845,344	8,073,175	379,531	10,426,619	2,690,880	13,307,485	4,642,380
1993	14,097,964	6,719,583	4,939,097	868,454	8,145,421	382,232	10,542,121	2,851,651	14,569,625	4,702,465
1994	15,776,358	7,979,151	5,453,163	948,310	8,993,308	424,045	11,462,910	3,168,727	16,220,176	5,052,762
1995	16,299,058	8,484,774	5,472,155	963,718	9,024,625	425,781	11,352,844	3,181,705	16,114,855	5,014,697
1996	17,449,701	8,573,396	5,520,226	1,091,515	9,103,911	430,151	11,812,223	3,214,486	16,729,945	4,699,580
1997	18,710,496	9,065,724	5,704,469	1,130,013	9,407,781	448,987	12,253,247	3,340,992	16,796,308	4,807,290
1998	19,328,703	9,328,876	5,740,060	1,213,501	9,466,512	448,016	12,227,725	3,333,707	17,799,494	5,048,144
1999	19,744,631	8,818,515	5,610,708	1,154,552	9,253,132	440,291	12,077,454	3,290,607	16,333,292	4,791,139
2000	20,505,959	8,865,638	5,686,608	1,238,904	9,378,342	443,003	12,149,085	3,310,961	17,335,360	5,041,752
2001	21,060,368	8,856,492	5,680,788	1,267,350	9,368,745	442,224	12,128,835	3,305,107	17,402,857	5,101,155
2002	21,546,743	8,800,010	5,636,572	1,264,317	9,295,807	440,061	12,072,158	3,288,837	16,950,969	5,052,182
2003	22,075,060	8,785,798	5,609,773	1,270,119	9,251,600	438,915	12,041,946	3,280,194	16,642,408	5,034,647
2004	22,735,085	8,821,534	5,651,424	1,324,390	9,320,314	440,462	12,082,943	3,291,812	17,719,916	5,188,718
2005	23,849,339	9,031,561	5,774,032	1,376,273	9,522,532	450,633	12,348,804	3,368,213	18,603,178	5,336,633
2006	23,727,137	8,990,469	5,746,590	1,387,159	9,477,264	448,288	12,287,788	3,350,591	19,123,378	5,369,452
2007	23,561,275	8,901,081	5,704,139	1,386,250	9,407,255	445,110	12,204,654	3,326,685	19,472,069	5,364,252
2008	23,438,250	8,871,737	5,669,962	1,388,678	9,350,878	442,759	12,143,258	3,308,960	19,813,577	5,362,678
2009	23,330,679	8,822,703	5,651,038	1,401,070	9,319,669	440,699	12,089,637	3,293,459	20,401,581	5,410,358
2010	23,183,394	8,764,777	5,621,400	1,412,901	9,270,788	437,881	12,016,017	3,272,242	20,932,697	5,447,192
2011	23,089,460	8,733,598	5,604,542	1,420,537	9,242,982	436,080	11,969,127	3,258,720	21,507,619	5,498,589
2012	22,905,577	8,659,264	5,556,933	1,411,573	9,164,451	432,561	11,877,061	3,232,197	21,787,976	5,490,097
2013	21,878,886	8,271,425	5,309,421	1,335,666	8,742,598	413,547	11,380,480	3,089,127	20,920,284	5,226,652
2014	22,552,791	8,521,730	5,486,053	1,414,120	9,048,200	425,879	11,704,379	3,182,277	22,434,590	5,540,868
2015	21,845,384	8,243,230	5,322,742	1,372,788	8,778,835	412,451	11,356,139	3,081,327	21,919,884	5,408,668
2016	21,556,417	8,117,630	5,234,350	1,325,605	8,633,043	407,109	11,221,692	3,041,247	21,336,194	5,275,056
2017	21,711,292	8,153,112	5,289,278	1,354,060	8,723,653	410,431	11,314,589	3,066,398	22,061,171	5,407,790
2018	21,418,451	7,918,954	5,227,431	1,338,202	8,621,653	405,181	11,184,080	3,027,502	22,007,504	5,368,012
2019	21,119,949	7,716,579	5,159,778	1,320,010	8,510,080	399,779	11,046,531	2,988,099	21,669,751	5,303,950
2020	20,604,725	7,473,821	5,024,528	1,280,122	8,287,020	389,400	10,771,380	2,912,455	20,961,816	5,154,755
2021	20,821,417	7,301,471	4,923,761	1,253,023	8,120,829	383,641	10,566,023	2,872,419	20,463,657	5,047,901
2022	21,135,993	7,173,868	4,845,538	1,217,432	7,991,821	380,371	10,439,650	2,848,696	19,771,740	4,921,786
2023	21,573,624	7,161,306	4,837,811	1,223,176	7,979,074	379,359	10,405,939	2,841,592	19,881,303	4,964,188
2024	22,068,133	7,115,666	4,843,993	1,230,757	7,989,280	379,645	10,411,164	2,843,776	20,013,539	5,026,664
2025	22,347,870	7,049,049	4,775,645	1,200,251	7,876,542	375,657	10,292,783	2,813,902	19,456,936	4,944,844
2026	22,337,772	7,027,353	4,771,493	1,203,779	7,869,701	375,451	10,273,800	2,812,519	19,490,524	4,987,018
2027	22,305,910	6,999,351	4,761,675	1,202,128	7,853,510	374,904	10,250,926	2,808,467	19,446,355	5,015,104
2028	22,323,040	7,004,779	4,762,582	1,202,538	7,855,005	375,166	10,253,372	2,810,515	19,445,853	5,055,781
2029	22,282,141	6,955,322	4,749,272	1,194,891	7,833,058	374,477	10,234,221	2,805,352	19,308,775	5,067,458
2030	22,293,757	6,933,762	4,755,006	1,200,051	7,842,506	374,668	10,238,716	2,806,822	19,399,922	5,126,709
2031	22,183,617	6,829,041	4,731,233	1,194,678	7,803,308	372,766	10,188,176	2,792,667	19,302,095	5,142,922
2032	22,172,684	6,788,128	4,725,321	1,188,518	7,793,551	372,580	10,185,254	2,791,285	19,192,592	5,164,825
2033	22,130,212	6,763,502	4,716,828	1,184,703	7,779,546	371,858	10,170,328	2,785,890	19,127,800	5,192,047
2034	21,994,005	6,720,926	4,697,731	1,185,969	7,748,056	369,573	10,115,978	2,768,752	19,147,067	5,228,773
2035	21,845,597	6,443,564	4,693,781	1,207,171	7,741,550	366,999	10,053,837	2,750,252	19,533,918	5,334,316
TOTAL	1,047,267,397	405,870,489	272,561,704	62,486,372	448,835,178	20,036,391	538,839,749	148,379,836	975,851,552	266,934,882

Note: As of January 1, 1992, Castaic Lake Water Agency will assume all rights and obligations granted to Devil's Den Water District according to its long-term water supply contract with the state of California.

TABLE B-19  
Total Transportation Charge for Each Contractor (Continued)

(in dollars)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Geronimo Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	55,537
1963	0	703,634	0	790,266	0	0	0	0	56,515	1,647,238
1964	22,138	1,282,655	9,546	1,621,621	0	0	0	0	85,184	2,822,211
1965	22,243	2,217,785	18,072	2,749,101	0	0	411	411	129,707	4,836,377
1966	38,604	3,965,502	33,988	4,915,820	0	0	574	574	148,332	7,440,347
1967	72,468	7,821,098	69,285	9,855,190	0	0	571	571	204,956	12,888,857
1968	130,897	15,554,109	144,998	18,946,072	0	0	574	574	280,902	25,045,610
1969	201,845	23,512,195	218,538	28,585,230	0	0	3,243	3,243	352,138	36,231,236
1970	294,150	31,093,031	277,838	38,054,254	0	0	15,368	15,368	389,947	46,484,625
1971	415,646	40,569,832	347,617	49,841,924	0	0	16,262	16,262	378,912	59,260,477
1972	544,537	53,670,230	428,109	65,460,048	0	0	17,656	17,656	403,970	77,101,071
1973	595,677	58,032,110	441,515	71,089,593	0	0	17,618	17,618	380,009	81,844,851
1974	619,351	62,568,458	461,666	75,957,145	0	0	17,761	17,761	402,855	87,592,349
1975	652,768	67,564,272	484,578	81,721,632	0	0	18,689	18,689	409,327	94,749,052
1976	676,671	69,306,724	481,631	84,217,480	0	0	17,760	17,760	431,578	98,146,523
1977	705,021	67,069,049	513,398	82,199,943	0	0	18,516	18,516	426,840	96,210,805
1978	717,612	73,761,383	529,608	89,683,473	0	0	17,664	17,664	433,057	105,651,922
1979	721,491	73,521,303	532,979	90,256,331	0	0	20,862	20,862	450,378	108,033,075
1980	786,783	80,815,844	578,096	99,250,342	0	0	18,044	18,044	509,048	118,021,624
1981	815,112	92,204,688	641,890	112,188,911	0	0	21,477	21,477	517,353	132,856,651
1982	866,164	93,971,680	680,451	114,447,525	0	0	28,588	28,588	516,009	136,105,252
1983	963,504	102,809,529	807,523	127,343,385	0	0	17,210	17,210	558,527	153,001,887
1984	1,077,771	140,654,788	872,849	173,387,492	0	0	18,276	18,276	562,367	161,432,889
1985	1,144,999	176,593,858	909,630	215,186,935	0	0	20,233	20,233	686,848	263,100,960
1986	1,157,087	193,970,350	943,203	234,943,981	0	0	20,231	20,231	640,060	286,058,216
1987	1,184,015	181,399,749	929,467	223,718,445	0	0	20,233	20,233	689,197	276,994,345
1988	1,214,070	192,350,555	917,708	233,971,188	0	0	20,239	20,239	711,453	287,948,669
1989	1,200,063	211,679,589	940,767	253,572,153	0	0	20,313	20,313	757,144	310,129,862
1990	1,253,167	248,638,140	1,192,155	296,228,712	0	0	20,331	20,331	806,260	350,713,908
1991	1,377,774	237,245,983	1,541,404	286,199,080	0	0	20,376	20,376	840,339	330,364,615
1992	1,604,620	317,428,677	1,699,586	385,990,624	0	0	20,420	20,420	914,873	459,356,130
1993	1,633,671	327,570,460	1,679,598	398,702,332	0	0	20,558	20,558	919,098	473,495,985
1994	1,650,294	370,862,523	1,807,482	449,799,209	0	0	20,704	20,704	918,612	532,646,092
1995	1,652,386	370,424,031	1,822,488	450,233,117	0	0	20,704	20,704	926,034	539,065,883
1996	1,651,272	386,574,684	2,967,430	469,818,500	0	0	20,704	20,704	929,166	573,649,709
1997	1,808,193	406,966,959	3,195,691	493,434,150	0	0	20,704	20,704	930,307	600,035,347
1998	1,739,355	405,309,970	3,210,882	493,786,945	0	0	20,704	20,704	930,147	600,344,905
1999	1,569,874	396,400,306	3,228,109	482,712,610	0	0	20,704	20,704	930,087	588,561,337
2000	4,089,113	401,869,026	3,305,785	493,219,516	0	0	20,704	20,704	930,572	599,441,209
2001	4,096,379	402,025,110	3,350,918	494,086,328	0	0	20,704	20,704	930,592	600,215,174
2002	4,027,200	398,550,500	3,378,278	490,303,634	0	0	20,704	20,704	930,690	596,172,247
2003	3,982,034	397,152,587	3,419,963	488,985,044	0	0	20,704	20,704	930,822	594,698,481
2004	4,055,213	400,414,819	3,483,795	494,530,425	0	0	20,704	20,704	931,088	600,473,461
2005	4,147,415	410,768,831	3,625,773	508,203,217	0	0	20,704	20,704	931,832	615,489,216
2006	4,132,706	409,252,134	3,631,023	506,923,979	0	0	20,704	20,704	931,810	613,896,242
2007	4,089,270	405,091,020	3,618,716	502,571,776	0	0	20,704	20,704	931,864	609,155,142
2008	4,051,718	403,235,391	3,626,603	500,702,449	0	0	20,704	20,704	931,949	606,972,172
2009	4,047,026	401,492,904	3,629,064	499,329,887	0	0	20,704	20,704	932,052	605,324,912
2010	4,035,065	399,439,646	3,624,729	497,458,729	0	0	20,704	20,704	932,197	603,098,421
2011	4,033,493	398,399,216	3,609,689	496,803,652	0	0	20,704	20,704	932,224	602,211,794
2012	3,990,216	394,988,273	3,576,014	493,072,193	0	0	20,704	20,704	932,280	598,034,901
2013	3,752,780	375,859,837	3,398,194	469,578,897	0	0	20,704	20,704	888,912	571,340,529
2014	3,951,425	390,134,452	3,515,396	487,912,160	0	0	20,704	20,704	861,752	591,184,667
2015	3,614,749	377,005,502	3,390,713	471,952,412	0	0	20,293	20,293	831,200	572,957,400
2016	3,695,746	370,193,539	3,340,285	463,377,913	0	0	20,131	20,131	813,973	563,541,284
2017	3,766,365	374,513,802	3,370,785	469,142,706	0	0	20,133	20,133	773,815	569,802,088
2018	3,714,274	368,832,650	3,295,652	460,359,746	0	0	20,131	20,131	697,205	560,385,941
2019	3,648,511	359,407,320	3,227,471	451,517,808	0	0	17,461	17,461	632,292	551,211,486
2020	3,523,477	347,977,457	3,133,055	437,494,011	0	0	5,336	5,336	611,497	536,506,285
2021	3,431,354	340,099,024	3,072,064	428,356,584	0	0	4,496	4,496	607,870	527,311,845
2022	3,324,436	331,631,767	3,026,383	418,709,481	0	0	3,088	3,088	607,003	517,553,257
2023	3,325,963	330,080,769	3,023,412	417,677,516	0	0	3,088	3,088	606,337	516,515,512
2024	3,340,510	328,734,119	3,011,101	417,068,347	0	0	3,086	3,086	605,883	515,966,543
2025	3,258,873	324,278,029	2,979,312	411,649,693	0	0	3,084	3,084	604,425	510,111,833
2026	3,260,113	323,430,224	2,972,497	410,812,244	0	0	3,083	3,083	604,001	508,950,008
2027	3,251,848	322,217,972	2,962,749	409,450,899	0	0	3,080	3,080	603,134	507,524,515
2028	3,251,751	322,655,564	2,965,749	409,961,695	0	0	3,079	3,079	602,058	508,045,048
2029	3,232,558	320,539,065	2,947,950	407,524,544	0	0	3,077	3,077	600,545	505,519,744
2030	3,244,455	320,408,014	2,939,806	407,564,190	0	0	3,076	3,076	599,185	505,575,564
2031	3,227,554	316,916,361	2,902,069	403,586,487	0	0	3,074	3,074	596,116	501,461,394
2032	3,213,266	315,303,373	2,886,854	401,778,231	0	0	3,073	3,073	596,454	499,604,435
2033	3,203,015	314,580,621	2,878,521	400,884,871	0	0	3,072	3,072	595,763	498,707,291
2034	3,199,946	312,982,039	2,862,563	399,021,378	0	0	3,071	3,071	592,096	496,601,660
2035	3,242,673	304,492,910	2,776,609	390,483,177	0	0	3,070	3,070	587,727	487,570,307
TOTAL	164,233,783	18,599,039,550	152,319,675	23,102,656,558	0	0	1,055,924	1,055,924	47,786,551	28,139,056,437

TABLE B-20A  
Calculation of Delta Water Rates

(Values in millions of dollars [\$] or millions of acre-feet [AF] discounted to 1991 at 4.713 percent per annum)

Procedure	Capital Cost Component		Minimum Operation, Maintenance, Power and Replacement Component (a)		Total Delta Water Rate	
	[1]		[2]		[3]	
<b>Commencing in 1992</b>						
Total Costs of "Initial" Project Conservation Facilities to be Reimbursed and Project Water Entitlements during the Project Repayment Period.	\$2,377.17 (b)	151.51 AF	\$1,370.45 (c)	151.51 AF	\$3,747.62	151.51 AF
Less, Project Power Revenues to be Realized During the Project Repayment Period.	-893.40		-298.20		-1191.60	
Less, Delta Water Charges Paid and Project Water Entitlements, Prior to 1991.	-639.20 (d)	-74.28 AF	-351.81	-74.28 AF	-991.01	-74.28 AF
TOTAL	\$844.57	77.23 AF	\$720.44	77.23 AF	\$1,565.01	77.23 AF
Rate Applicable in 1992 (e)	\$10.94 per acre-foot		\$9.33 per acre-foot		\$20.27 per acre-foot	
<b>Commencing in 1993</b>						
Total Costs of "Initial" Project Conservation Facilities to be Reimbursed and Project Water Entitlements during the Project Repayment Period.	\$2,386.45 (b)	151.50 AF	\$1,407.87 (c)	151.50 AF	\$3,794.32	151.50 AF
Less, Project Power Revenues to be Realized during the Project Repayment Period.	-893.40		-298.20		-1191.60	
Less, Delta Water Charges Paid and Project Water Entitlements, Prior to 1992.	-682.42	-78.23 AF	-388.68	-78.23 AF	-1071.10	-78.23 AF
TOTAL	\$810.63	73.27 AF	\$720.99	73.27 AF	\$1,531.62	73.27 AF
Rate Applicable 1993 through 2035 (e)	\$11.06 per acre-foot		\$9.84 per acre-foot		\$20.90 per acre-foot	

a) Considering that all operating costs of Project Conservation Facilities will not vary with annual amounts of Project water delivered, and therefore are properly classified as "Minimum" OMP&R Costs.

b) Including net credits of \$4,850,000 for settlements as to the magnitude of Project Capital costs incurred prior to December 31, 1960, and net credits of \$8,678,320 for settlement as to the magnitude of Project Capital costs incurred during the 1961 through 1978 period.

c) Includes conservation power costs and credits at San Luis.

d) Applying all Delta Water Charges paid prior to 1970 to reimburse Capital costs (the charge was not divided into components until 1970).

e) Minimum replacement component costs for 1992, deleted in the 1992 Delta Water Rate, are included in the rate commencing in 1993.

TABLE B-20B  
Delta Water Rates by Facility

(in dollars per acre-foot)

Item	Capital Cost Component	Minimum Operation, Maintenance, Power and Replacement Component	Total Delta Water Rate
	[1]	[2]	[3]
<b>Initial Conservation Facilities</b>			
Oroville Division			
Water Supply and power costs (a)	19.33	9.69	29.02
Less, Oroville Power Revenues	<u>-11.56</u>	<u>-3.86</u>	<u>-15.42</u>
Subtotal	7.77	5.83	13.60
Delta Facilities (b)	4.43	2.67	7.10
California Aqueduct, portion			
Reach 1	1.25	1.64	2.89
Reach 2A	0.74	0.30	1.04
Reach 2B	0.37	0.12	0.49
Reach 3	<u>0.24</u>	<u>0.10</u>	<u>0.34</u>
Subtotal	2.60	2.16	4.76
San Luis Facilities	3.86	3.22	7.08
Planning and preoperating costs through 1990	1.08	0.00	1.08
Less, Capital Cost Credits	-0.53	0.00	-0.53
Less, Delta Water Charges paid prior to 1991	<u>-8.27</u>	<u>-4.55</u>	<u>-12.82</u>
Rate applicable 1992 through 2035 (c)	10.94	9.33	20.27

a) Includes revenue received from non-contractors.

b) Includes (1) Delta Facility planning costs, (2) Delta Studies costs, and (3) Suisun Marsh Facilities costs.

c) The replacement component may be included in future years.



TABLE B-21  
Total Delta Water Charge for Each Contractor

(in dollars) Sheet 1 of 4

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County WA	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County	Santa Barbara County	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	14,000	50,050	177,100	241,150	0	0	0
1968	0	0	0	19,156	29,701	193,245	242,102	0	0	0
1969	0	0	0	30,324	44,096	215,483	289,903	0	0	0
1970	0	0	0	80,908	107,730	585,200	773,838	0	0	0
1971	0	0	0	57,320	123,080	637,120	817,520	0	0	0
1972	0	0	0	99,668	143,877	707,328	950,873	0	0	0
1973	0	0	0	120,880	167,099	782,167	1,070,146	0	0	0
1974	0	0	0	137,684	182,339	818,664	1,138,687	0	0	0
1975	0	0	0	146,204	187,324	804,123	1,137,651	0	0	0
1976	0	0	0	168,489	208,652	862,036	1,239,177	0	0	0
1977	0	0	0	172,931	208,645	827,062	1,208,638	0	0	0
1978	0	0	0	206,378	243,231	926,594	1,376,203	0	0	0
1979	0	0	0	237,771	273,208	1,005,955	1,516,934	0	0	0
1980	0	18,325	18,325	272,717	307,426	1,090,867	1,671,010	12,396	3,479	15,875
1981	0	25,440	25,440	415,564	488,768	1,589,984	2,475,316	18,068	10,414	28,482
1982	0	34,917	34,917	457,988	519,053	1,679,289	2,656,330	38,166	99,788	137,954
1983	0	12,035	12,035	316,703	359,775	1,114,795	1,791,273	38,004	68,902	106,906
1984	0	22,453	22,453	334,587	380,914	1,132,448	1,847,949	57,909	105,498	163,407
1985	0	22,001	22,001	381,970	435,728	1,244,939	2,062,637	106,103	192,937	299,040
1986	35,358	21,767	57,125	423,378	485,372	1,330,615	2,239,365	151,206	275,347	426,553
1987	0	22,984	22,984	430,024	493,786	1,304,900	2,228,710	185,355	336,684	522,019
1988	88,878	150,486	239,364	464,114	533,731	1,361,400	2,359,245	239,792	436,607	676,399
1989	102,688	305,328	408,016	513,853	591,760	1,491,833	2,597,446	331,518	602,402	933,920
1990	112,723	355,132	467,855	534,787	616,676	1,537,512	2,688,975	417,802	760,166	1,177,968
1991	129,296	395,515	524,811	603,028	681,067	1,667,194	2,951,289	443,403	806,745	1,250,148
1992	158,879	489,808	648,687	729,545	808,579	1,945,453	3,483,577	506,628	921,780	1,428,408
1993	177,463	546,183	723,646	794,297	865,365	2,048,449	3,708,111	522,564	950,773	1,473,337
1994	190,945	586,943	777,888	836,102	877,907	2,090,254	3,804,263	522,564	950,773	1,473,337
1995	204,427	715,912	920,339	877,907	877,907	2,090,254	3,846,068	522,564	950,773	1,473,337
1996	217,909	790,116	1,008,025	919,712	877,907	2,090,254	3,887,873	522,564	950,773	1,473,337
1997	231,287	799,522	1,030,809	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
1998	244,769	809,137	1,053,906	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
1999	257,728	818,753	1,076,481	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2000	272,778	828,159	1,100,937	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2001	285,633	837,774	1,123,407	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2002	296,503	847,389	1,143,892	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2003	309,358	857,004	1,166,362	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2004	321,899	866,410	1,188,309	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2005	334,441	867,455	1,201,896	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2006	343,847	868,501	1,212,348	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2007	355,343	869,546	1,224,889	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2008	368,930	870,591	1,239,521	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2009	380,426	871,636	1,252,062	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2010	391,923	872,681	1,264,604	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2011	405,509	873,728	1,279,235	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2012	417,006	874,771	1,291,777	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2013	430,592	875,816	1,306,408	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2014	444,179	876,862	1,321,041	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2015	457,766	877,907	1,335,673	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2016	470,307	877,907	1,348,214	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2017	482,849	877,907	1,360,756	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2018	495,390	877,907	1,373,297	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2019	507,932	877,907	1,385,839	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2020	520,473	877,907	1,398,380	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2021	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2022	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2023	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2024	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2025	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2026	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2027	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2028	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2029	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2030	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2031	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2032	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2033	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2034	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
2035	522,564	877,907	1,400,471	961,517	877,907	2,090,254	3,929,678	522,564	950,773	1,473,337
TOTAL	18,283,894	38,337,105	56,620,999	48,297,152	46,390,126	116,872,423	211,559,701	25,016,602	45,503,968	70,520,570



TABLE B-21  
Total Delta Water Charge for Each Contractor (Continued)

(in dollars)

Sheet 2 of 4

Calendar Year	SAN JOAQUIN VALLEY AREA								
	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
				Municipal and Industrial	Agri- cultural				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	40,695	10,469	0	0	165,522	3,177	8,073	98,608	326,544
1969	61,267	3,281	0	0	337,686	4,200	8,805	102,478	517,717
1970	104,405	19,950	0	0	964,915	8,645	17,290	228,095	1,343,300
1971	129,596	21,720	0	0	1,377,772	9,412	20,272	264,260	1,823,032
1972	160,756	24,113	0	0	2,175,835	11,253	43,131	905,057	3,320,145
1973	195,541	26,664	0	386,638	2,373,167	13,333	27,553	373,307	3,396,203
1974	224,202	27,909	0	446,545	2,781,595	13,954	29,770	445,138	3,969,113
1975	329,688	27,413	0	481,560	3,041,048	14,620	33,702	827,591	4,755,622
1976	414,245	29,388	0	549,549	3,931,785	15,673	35,966	877,151	5,853,757
1977	312,532	28,195	0	569,545	4,071,218	15,977	40,289	626,210	5,663,966
1978	342,208	31,588	0	674,939	4,950,959	20,006	41,065	666,516	8,727,281
1979	395,523	34,294	0	772,757	5,901,986	22,863	45,725	771,613	7,944,761
1980	555,341	37,679	0	881,371	8,984,026	27,272	70,658	933,481	9,489,828
1981	740,789	54,204	0	1,351,487	11,140,730	41,556	77,692	1,373,168	14,779,626
1982	782,396	57,248	0	1,518,993	12,703,436	47,707	85,873	1,530,443	16,726,096
1983	543,462	38,004	0	1,057,789	9,141,315	35,471	58,273	78,506	10,952,820
1984	580,379	114,290	0	1,333,200	9,741,623	39,893	61,770	756,132	12,627,287
1985	667,740	42,441	0	1,540,611	11,403,920	48,100	69,320	644,383	14,416,515
1986	745,447	45,362	0	2,213,919	12,425,873	55,946	77,115	1,469,725	17,033,387
1987	762,180	44,485	0	1,766,065	13,410,817	59,314	77,108	1,503,601	17,623,570
1988	827,669	46,411	0	1,916,790	14,707,763	61,882	83,540	1,633,680	19,277,735
1989	921,621	49,728	0	2,125,033	16,312,361	66,304	92,825	1,821,693	21,369,565
1990	964,288	50,136	0	1,998,766	17,276,959	66,848	95,259	1,980,383	22,432,639
1991	1,023,374	53,208	0	2,121,239	18,335,590	70,944	101,096	2,101,729	23,807,180
1992	1,169,299	60,795	0	2,423,711	20,950,102	81,061	115,511	2,401,419	27,201,898
1993	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
1994	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
1995	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
1996	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
1997	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
1998	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
1999	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2000	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2001	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2002	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2003	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2004	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2005	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2006	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2007	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2008	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2009	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2010	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2011	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2012	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2013	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2014	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2015	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2016	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2017	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2018	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2019	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2020	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2021	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2022	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2023	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2024	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2025	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2026	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2027	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2028	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2029	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2030	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2031	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2032	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2033	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2034	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
2035	1,206,077	62,708	0	2,499,944	21,609,046	83,610	119,144	2,476,951	28,057,480
TOTAL	64,855,954	3,675,419	0	133,628,099	1,135,796,981	4,450,641	6,540,873	130,923,260	1,479,871,227

TABLE B-21  
Total Delta Water Charge for Each Contractor (Continued)

(in dollars)

Sheet 3 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley- East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline- Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	13,060	0	0	0	0	0	0	0	0
1969	0	17,804	0	0	0	0	0	0	0	0
1970	0	37,905	0	0	0	0	0	0	0	0
1971	0	48,508	0	0	0	0	0	0	0	0
1972	160,756	74,751	41,797	4,662	64,303	1,367	67,518	13,021	369,739	85,202
1973	222,207	107,163	51,552	7,279	79,994	2,577	95,104	26,131	54,908	14,338
1974	279,090	143,266	59,539	10,791	93,030	3,721	121,869	39,631	465,150	114,427
1975	319,822	166,307	63,964	13,250	100,515	4,752	140,722	50,989	479,733	119,705
1976	431,018	207,673	74,449	17,045	117,550	6,269	174,366	67,591	538,772	137,142
1977	469,922	226,502	79,144	19,079	122,180	6,861	189,848	77,255	540,410	139,097
1978	600,180	274,819	97,313	24,428	147,413	9,687	236,913	98,345	631,768	165,313
1979	720,173	320,077	115,033	29,836	171,470	11,889	284,640	117,285	714,457	189,760
1980	857,818	376,845	134,920	35,949	210,736	14,256	337,177	138,590	811,952	215,694
1981	1,355,100	592,631	218,713	57,637	343,292	22,946	534,813	211,396	1,237,658	330,644
1982	1,551,434	664,082	254,298	66,408	400,739	26,335	648,002	235,100	1,341,923	364,482
1983	1,110,994	472,521	184,283	47,759	291,367	19,002	434,517	163,925	943,775	252,096
1984	450,406	509,602	202,914	52,247	321,718	20,719	472,282	174,500	1,003,760	266,383
1985	565,881	591,346	240,344	61,540	381,970	24,474	551,734	200,605	1,152,983	308,405
1986	635,066	659,259	275,347	70,160	438,498	27,822	625,994	223,785	1,285,253	350,799
1987	652,450	676,176	288,131	73,104	467,095	29,064	648,002	228,654	1,319,729	364,779
1988	711,641	742,582	319,496	80,756	525,996	32,024	711,641	248,146	1,438,752	402,232
1989	2,083,593	830,453	362,565	91,333	605,021	36,301	803,932	276,155	1,607,864	454,180
1990	2,207,667	869,029	386,049	96,930	636,731	38,438	848,974	289,119	1,696,277	481,308
1991	2,454,678	961,298	409,704	102,869	675,746	40,793	900,994	306,835	1,819,725	510,800
1992	2,804,695	1,098,371	468,125	117,538	772,102	46,610	1,029,469	350,587	2,079,203	563,636
1993	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
1994	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
1995	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
1996	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
1997	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
1998	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
1999	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2000	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2001	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2002	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2003	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2004	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2005	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2006	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2007	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2008	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2009	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2010	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2011	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2012	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2013	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2014	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2015	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2016	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2017	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2018	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2019	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2020	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2021	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2022	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2023	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2024	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2025	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2026	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2027	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2028	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2029	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2030	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2031	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2032	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2033	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2034	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
2035	2,892,912	1,132,918	482,849	121,235	796,387	48,076	1,061,849	361,614	2,144,601	601,993
TOTAL	145,039,806	59,397,504	25,090,187	6,293,705	41,212,107	2,493,175	55,183,073	19,087,047	113,751,634	31,736,121

Note: As of January 1, 1992, Castaic Lake Water Agency will assume all rights and obligations granted to Devil's Den Water District according to its long-term water supply contract with the state of California.

TABLE B-21  
Total Delta Water Charge for Each Contractor (Continued)

(in dollars)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Geronio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	241,150
1968	0	0	0	13,060	0	1,050	875	1,925	0	583,631
1969	0	0	0	17,804	0	1,225	929	2,154	0	827,578
1970	0	0	0	37,905	0	3,848	1,995	5,843	0	2,160,886
1971	0	0	0	48,508	0	4,546	3,186	7,732	0	2,696,792
1972	0	2,043,211	0	2,926,327	0	4,929	3,778	8,707	0	7,206,052
1973	0	2,317,893	0	2,979,146	0	7,059	4,444	11,503	0	7,456,998
1974	0	4,231,933	0	5,562,447	0	8,336	4,931	13,267	0	10,683,514
1975	0	5,073,286	0	6,533,045	0	9,418	5,117	14,533	0	12,440,851
1976	0	6,422,167	0	8,194,042	0	7,004	5,780	12,784	0	15,299,760
1977	0	7,104,278	0	8,974,576	0	16,917	5,827	22,744	0	15,869,924
1978	0	9,016,389	0	11,302,568	0	12,635	8,844	19,479	0	19,425,531
1979	0	10,935,192	0	13,609,812	0	16,575	7,773	24,348	0	23,095,855
1980	84,294	13,102,796	12,396	16,333,423	0	19,834	8,801	28,635	0	27,557,096
1981	140,930	20,910,099	36,136	25,991,995	0	21,682	13,370	35,052	0	43,335,911
1982	167,929	23,998,560	57,248	29,441,595	0	16,117	14,694	30,811	0	49,027,703
1983	124,148	17,203,307	50,672	21,298,366	0	15,202	10,134	25,336	0	34,186,736
1984	138,982	18,766,458	84,344	22,444,314	20,590	15,442	10,681	46,713	0	37,152,123
1985	166,935	22,050,974	84,882	26,382,073	24,050	16,976	12,166	53,192	0	43,235,458
1986	195,056	25,089,658	120,965	29,997,662	31,753	18,145	13,457	63,355	0	49,817,447
1987	207,598	26,095,043	148,284	31,198,109	37,071	17,794	13,642	68,507	0	51,663,899
1988	233,604	28,781,238	201,116	34,429,224	46,722	18,565	14,852	80,139	0	57,062,086
1989	268,530	32,505,376	265,215	40,190,518	61,184	19,891	16,576	97,651	0	65,617,116
1990	289,119	33,616,369	334,242	41,790,252	63,506	20,055	17,381	100,942	0	68,658,631
1991	306,835	35,676,185	354,722	44,521,184	170,267	21,283	19,155	210,705	0	73,265,317
1992	350,587	40,763,329	405,303	50,869,555	194,545	24,318	22,697	241,560	0	83,873,685
1993	361,614	42,045,460	418,051	52,469,559	194,545	25,083	24,247	243,875	0	86,676,008
1994	361,614	42,045,460	418,051	52,469,559	194,545	25,083	25,083	244,711	0	88,827,238
1995	361,614	42,045,460	418,051	52,469,559	194,545	25,083	26,128	245,756	0	87,012,539
1996	361,614	42,045,460	418,051	52,469,559	194,545	25,083	27,173	246,801	0	87,143,075
1997	361,614	42,045,460	418,051	52,469,559	194,545	25,083	28,218	247,846	0	87,208,709
1998	361,614	42,045,460	418,051	52,469,559	194,545	25,083	29,264	248,892	0	87,232,852
1999	361,614	42,045,460	418,051	52,469,559	194,545	25,083	30,309	249,937	0	87,256,472
2000	361,614	42,045,460	418,051	52,469,559	194,545	25,083	31,563	251,191	0	87,282,182
2001	361,614	42,045,460	418,051	52,469,559	194,545	25,083	32,817	252,445	0	87,305,906
2002	361,614	42,045,460	418,051	52,469,559	194,545	25,083	34,071	253,699	0	87,327,645
2003	361,614	42,045,460	418,051	52,469,559	194,545	25,083	35,325	254,953	0	87,351,369
2004	361,614	42,045,460	418,051	52,469,559	194,545	25,083	36,579	256,207	0	87,374,570
2005	361,614	42,045,460	418,051	52,469,559	194,545	25,083	37,834	257,462	0	87,389,412
2006	361,614	42,045,460	418,051	52,469,559	194,545	25,083	39,297	258,925	0	87,401,327
2007	361,614	42,045,460	418,051	52,469,559	194,545	25,083	40,760	260,388	0	87,415,331
2008	361,614	42,045,460	418,051	52,469,559	194,545	25,083	42,223	261,851	0	87,431,428
2009	361,614	42,045,460	418,051	52,469,559	194,545	25,083	43,686	263,314	0	87,445,430
2010	361,614	42,045,460	418,051	52,469,559	194,545	25,083	45,149	264,777	0	87,459,435
2011	361,614	42,045,460	418,051	52,469,559	194,545	25,083	46,822	266,450	0	87,475,739
2012	361,614	42,045,460	418,051	52,469,559	194,545	25,083	48,494	268,122	0	87,489,953
2013	361,614	42,045,460	418,051	52,469,559	194,545	25,083	50,375	270,003	0	87,506,465
2014	361,614	42,045,460	418,051	52,469,559	194,545	25,083	52,256	271,884	0	87,522,979
2015	361,614	42,045,460	418,051	52,469,559	194,545	25,083	54,347	273,975	0	87,539,702
2016	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,554,333
2017	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,566,875
2018	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,579,416
2019	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,591,958
2020	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,604,499
2021	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2022	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2023	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2024	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2025	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2026	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2027	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2028	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2029	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2030	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2031	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2032	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2033	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2034	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
2035	361,614	42,045,460	418,051	52,469,559	194,545	25,083	56,437	276,065	0	87,606,590
TOTAL	18,223,949	2,193,658,521	20,111,718	2,731,278,547	9,015,123	1,417,413	2,229,845	12,662,361	0	4,562,513,425

TABLE B-22  
Total Water System Revenue Bond Surcharge for Each Contractor

(in dollars)

Sheet 1 of 4

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County WA	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County	Santa Barbara County	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	36,888	51,291	88,179	32,209	38,210	126,672	197,091	16,621	30,887	47,508
1989	73,556	104,930	178,486	65,325	77,891	256,675	399,891	40,433	74,806	115,239
1990	64,850	95,278	160,128	60,501	80,631	235,408	376,540	44,036	81,591	125,627
1991	98,609	143,740	242,349	97,180	127,546	366,679	591,405	69,827	130,219	200,046
1992	159,816	255,180	414,996	147,398	167,736	438,360	753,494	112,936	209,972	322,910
1993	157,370	254,859	412,229	153,783	172,074	442,033	767,890	135,724	259,790	395,514
1994	154,450	257,464	411,914	159,495	172,399	441,719	773,613	176,725	347,162	523,887
1995	151,571	260,135	411,706	165,248	172,769	441,521	779,538	217,770	434,620	652,390
1996	148,652	262,739	411,391	170,958	173,093	441,208	785,259	258,756	521,959	780,715
1997	145,785	265,434	411,219	178,727	173,478	441,047	791,252	299,832	609,483	909,315
1998	142,892	268,084	410,976	182,468	173,833	440,811	797,112	340,867	696,921	1,037,788
1999	142,009	266,110	408,119	183,742	174,731	441,981	800,434	332,700	679,249	1,011,949
2000	141,104	264,097	405,201	184,991	175,606	443,052	803,649	324,476	661,461	985,937
2001	139,930	261,579	401,509	185,885	176,142	443,290	805,317	315,637	642,419	958,056
2002	139,053	259,618	398,671	187,172	177,053	444,469	808,694	307,474	624,754	932,228
2003	138,068	257,454	395,522	188,315	177,827	445,305	811,447	299,068	606,593	905,661
2004	137,117	255,352	392,469	189,504	178,644	446,248	814,396	290,733	588,578	879,311
2005	136,046	253,029	389,075	190,527	179,304	446,802	816,633	282,149	570,058	852,207
2006	135,062	250,866	385,928	191,669	180,077	447,636	819,382	273,748	551,910	825,658
2007	134,166	248,869	383,035	192,938	180,970	448,768	822,676	265,524	534,118	799,642
2008	133,131	246,812	379,743	194,007	181,674	449,432	825,113	257,023	515,767	772,790
2009	133,575	244,874	378,449	194,996	182,199	449,284	826,479	250,996	502,667	753,663
2010	134,040	243,184	377,224	196,016	182,754	449,215	827,985	245,032	489,698	734,730
2011	134,440	241,384	375,824	196,939	183,220	448,932	829,091	238,973	476,542	715,515
2012	134,892	239,686	374,578	197,936	183,756	448,827	830,519	233,030	463,621	696,651
2013	135,242	237,819	373,061	198,784	184,156	448,394	831,334	226,940	450,412	677,352
2014	135,645	236,053	371,698	199,706	184,626	448,138	832,470	220,965	437,437	658,402
2015	136,078	234,351	370,429	200,673	185,139	447,992	833,804	215,066	424,615	639,681
2016	136,446	232,544	368,990	201,541	185,562	447,632	834,735	209,087	411,640	620,727
2017	136,747	230,636	367,383	202,310	185,895	447,064	835,269	203,038	398,535	601,573
2018	137,023	228,700	365,723	203,041	186,195	446,423	835,659	196,988	385,434	582,422
2019	137,355	226,869	364,224	203,852	186,571	445,971	836,394	191,052	372,561	563,613
2020	141,229	230,838	372,067	209,926	191,757	456,988	858,671	189,909	369,008	558,917
2021	184,697	302,230	486,927	284,431	259,782	618,954	1,163,167	237,823	458,482	696,305
2022	162,963	266,534	429,497	247,178	225,769	537,971	1,010,918	213,866	413,745	627,611
2023	206,431	337,926	544,357	321,683	293,794	699,937	1,315,414	261,780	503,219	764,999
2024	119,496	195,142	314,637	172,674	157,745	376,005	706,424	165,952	324,271	490,223
2025	0	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0
TOTAL	5,016,423	8,711,490	13,727,913	6,731,728	6,470,608	16,146,823	29,349,159	8,162,558	16,254,204	24,416,762

TABLE B-22

## Total Water System Revenue Bond Surcharge for Each Contractor (Continued)

(in dollars)

Sheet 2 of 4

Calendar Year	SAN JOAQUIN VALLEY AREA								
	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
				Municipal and Industrial	Agri- cultural				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]
1971	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0
1988	43,035	2,098	0	84,892	916,572	2,822	3,611	84,520	1,137,550
1989	89,334	4,199	0	175,229	1,879,267	5,626	7,427	175,939	2,337,021
1990	84,041	3,809	0	453,379	1,492,333	5,118	6,878	171,890	2,217,448
1991	127,952	5,805	0	559,058	2,434,518	7,833	10,533	261,682	3,407,381
1992	221,717	10,775	0	814,977	5,205,435	14,378	19,997	458,408	6,745,687
1993	220,350	10,737	0	461,964	5,571,935	14,362	19,947	451,649	6,750,944
1994	220,646	10,784	0	462,578	5,609,427	14,427	20,056	452,298	6,790,216
1995	220,999	10,833	0	463,313	5,648,387	14,496	20,170	453,066	6,831,264
1996	221,294	10,880	0	463,927	5,685,867	14,561	20,278	453,716	6,870,523
1996	221,666	10,930	0	464,701	5,725,316	14,631	20,394	454,522	6,912,180
1998	222,001	10,979	0	465,397	5,763,804	14,699	20,506	455,252	6,952,638
1999	223,846	11,096	0	469,127	5,838,373	14,853	20,741	459,067	7,037,103
2000	225,662	11,211	0	472,796	5,912,221	15,004	20,973	462,824	7,120,691
2001	227,042	11,304	0	475,554	5,974,637	15,127	21,165	465,687	7,190,516
2002	228,904	11,422	0	479,319	6,049,703	15,282	21,402	469,538	7,275,570
2003	230,590	11,531	0	482,716	6,120,129	15,425	21,622	473,027	7,355,040
2004	232,332	11,642	0	486,230	6,192,048	15,572	21,847	476,631	7,436,302
2005	233,871	11,744	0	489,318	6,258,530	15,705	22,054	479,818	7,511,040
2006	235,555	11,852	0	492,711	6,328,890	15,848	22,274	483,304	7,590,434
2007	237,396	11,969	0	496,432	6,403,482	16,001	22,509	487,111	7,674,900
2008	238,990	12,073	0	499,638	6,471,424	16,138	22,720	490,413	7,751,396
2009	240,938	12,190	0	503,066	6,544,085	16,279	22,952	494,432	7,833,942
2010	242,921	12,309	0	506,571	6,617,658	16,422	23,187	498,524	7,917,592
2011	244,782	12,421	0	509,821	6,687,805	16,557	23,410	502,363	7,997,159
2012	246,732	12,538	0	513,261	6,760,336	16,688	23,642	506,387	8,079,594
2013	248,494	12,645	0	516,311	6,827,621	16,826	23,856	510,023	8,155,776
2014	250,345	12,757	0	519,550	6,897,294	16,960	24,077	513,844	8,234,627
2015	252,250	12,872	0	522,903	6,968,380	17,098	24,304	517,775	8,315,582
2016	254,028	12,979	0	525,994	7,035,873	17,227	24,519	521,444	8,392,064
2017	255,677	13,081	0	528,821	7,099,717	17,347	24,721	524,849	8,464,213
2018	257,275	13,179	0	531,545	7,162,024	17,464	24,917	528,148	8,534,552
2019	258,971	13,283	0	534,475	7,226,979	17,587	25,123	531,649	8,608,067
2020	267,367	13,730	0	551,222	7,479,292	18,166	25,980	548,906	8,904,663
2021	361,286	18,596	0	745,977	10,153,021	24,637	35,215	741,769	12,080,501
2022	314,326	16,163	0	648,600	8,816,157	21,402	30,597	645,337	10,492,582
2023	408,245	21,029	0	843,355	11,489,886	27,873	39,832	838,200	13,668,420
2024	220,408	11,297	0	453,844	6,142,427	14,930	21,363	452,475	7,316,744
2025	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0
TOTAL	8,531,268	428,742	0	18,668,572	227,390,853	571,381	804,799	17,496,487	273,892,102

TABLE B-22  
Total Water System Revenue Bond Surcharge for Each Contractor (Continued)

(in dollars)

Sheet 3 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley- East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	81,377	72,318	34,229	9,695	56,339	2,728	70,906	20,564	191,436	50,534
1989	309,973	148,786	70,827	19,989	117,714	5,671	146,402	42,172	391,651	104,150
1990	291,440	136,318	66,869	18,753	110,224	5,331	137,561	39,311	364,910	97,431
1991	461,792	218,364	102,588	28,854	169,102	8,145	210,978	60,111	565,173	149,606
1992	629,711	288,205	124,615	33,693	205,417	10,726	263,630	80,051	630,440	170,983
1993	624,281	284,968	123,504	33,676	203,588	10,626	261,167	79,322	629,369	170,848
1994	621,058	282,081	122,158	33,265	201,374	10,562	258,612	78,864	621,305	168,815
1995	617,997	279,268	120,844	32,863	199,212	10,500	256,125	78,426	613,384	166,826
1996	614,775	276,382	119,499	32,453	196,998	10,436	253,571	77,968	605,304	164,793
1996	611,766	273,592	118,195	32,054	194,853	10,375	251,105	77,537	597,432	162,818
1998	608,652	270,755	116,871	31,649	192,674	10,313	248,596	77,093	589,458	160,814
1999	610,299	270,213	116,586	31,493	192,207	10,333	248,278	77,262	585,614	159,905
2000	611,864	269,633	116,284	31,333	191,713	10,352	247,925	77,420	581,684	158,973
2001	612,251	268,536	115,760	31,112	190,851	10,351	247,095	77,430	576,640	157,737
2002	613,939	268,009	115,481	30,958	190,395	10,371	246,792	77,604	572,824	156,836
2003	615,152	267,275	115,113	30,779	189,792	10,384	246,296	77,718	568,562	155,813
2004	616,514	266,605	114,772	30,608	189,234	10,400	245,861	77,851	564,437	154,828
2005	617,338	265,703	114,332	30,411	188,511	10,406	245,211	77,916	559,822	153,708
2006	618,549	264,969	113,964	30,232	187,907	10,419	244,715	78,029	555,562	152,686
2007	620,170	264,409	113,671	30,074	187,428	10,438	244,382	78,195	551,668	151,764
2008	621,146	263,575	113,260	29,884	186,753	10,447	243,794	78,279	547,199	150,684
2009	622,030	262,649	112,872	29,709	186,117	10,453	243,252	78,344	543,027	149,683
2010	623,020	261,772	112,505	29,539	185,516	10,461	242,755	78,423	538,964	148,712
2011	623,709	260,773	112,085	29,356	184,829	10,463	242,143	78,464	534,658	147,673
2012	624,641	259,881	111,712	29,185	184,217	10,470	241,629	78,536	530,578	146,696
2013	625,112	258,802	111,257	28,994	183,472	10,469	240,940	78,550	526,126	145,615
2014	625,826	257,829	110,849	28,814	182,803	10,472	240,348	78,595	521,900	144,596
2015	626,689	256,922	110,469	28,643	182,180	10,478	239,817	78,659	517,815	143,616
2016	627,250	255,896	110,037	28,458	181,473	10,479	239,174	78,685	513,499	142,572
2017	627,512	254,754	109,556	28,261	180,683	10,475	238,420	78,673	508,962	141,465
2018	627,667	253,576	109,059	28,060	179,868	10,469	237,631	78,649	504,365	140,340
2019	628,083	252,509	108,610	27,872	179,131	10,467	236,945	78,657	500,001	139,280
2020	644,672	257,919	110,947	28,397	182,990	10,735	242,343	80,690	508,414	141,782
2021	864,988	343,289	146,804	37,294	242,131	14,380	321,631	108,149	863,495	185,695
2022	754,830	300,604	128,875	32,845	212,560	12,558	281,987	94,420	585,954	163,739
2023	975,146	385,974	164,732	41,742	271,701	16,203	361,275	121,879	741,035	207,652
2024	534,514	215,234	93,019	23,949	153,420	8,912	202,699	66,960	430,874	119,825
2025	0	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0
TOTAL	22,285,733	9,540,347	4,132,810	1,094,946	6,815,377	377,258	8,871,991	2,825,456	20,133,561	5,529,493

Note: As of January 1, 1992, Castaic Lake Water Agency will assume all rights and obligations granted to Devil's Den Water District according to its long-term water supply contract with the state of California.

TABLE B-22  
Total Water System Revenue Bond Surcharge for Each Contractor (Continued)

(in dollars)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Geronio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	30,414	3,345,930	22,943	3,989,413	1,891	699	1,081	3,471	0	5,463,212
1989	63,360	6,914,298	52,095	8,387,088	3,808	1,385	2,190	7,383	0	11,425,108
1990	59,899	6,360,905	55,124	7,746,076	3,993	1,260	2,023	7,276	0	10,633,095
1991	91,972	9,738,012	84,183	11,888,880	15,470	1,934	3,153	20,557	0	16,350,618
1992	104,167	11,293,903	103,049	13,938,590	26,357	4,024	4,946	35,327	0	22,211,004
1993	104,071	11,191,376	101,912	13,818,728	32,170	4,021	5,025	41,216	0	22,186,521
1994	102,796	11,064,159	100,983	13,666,032	32,415	4,052	5,173	41,640	0	22,207,302
1995	101,548	10,939,846	100,080	13,516,919	32,668	4,083	5,322	42,073	0	22,233,890
1996	100,274	10,812,679	99,151	13,364,283	32,913	4,114	5,470	42,497	0	22,254,668
1996	99,035	10,689,251	98,256	13,216,269	33,169	4,146	5,620	42,935	0	22,283,150
1998	97,778	10,563,985	97,345	13,065,983	33,419	4,177	5,769	43,365	0	22,307,862
1999	97,189	10,524,987	97,239	13,021,605	33,856	14,530	6,043	54,429	0	22,333,639
2000	96,586	10,484,486	97,119	12,975,372	34,288	24,892	6,316	65,496	0	22,356,346
2001	95,798	10,423,867	96,813	12,904,241	34,654	35,198	6,577	76,429	0	22,336,068
2002	95,214	10,385,435	96,713	12,860,571	35,094	45,571	6,851	87,516	0	22,363,250
2003	94,555	10,338,928	96,538	12,806,905	35,507	55,916	7,120	98,543	0	22,373,118
2004	93,920	10,294,922	96,386	12,756,338	35,928	66,276	7,392	109,596	0	22,388,412
2005	93,203	10,241,961	96,150	12,694,672	36,318	76,572	7,656	120,546	0	22,384,173
2006	92,545	10,195,468	95,974	12,641,019	36,730	86,909	7,925	131,564	0	22,393,985
2007	91,948	10,155,705	95,863	12,595,715	37,167	97,309	8,200	142,676	0	22,418,644
2008	91,255	10,105,372	95,651	12,537,299	37,565	107,609	8,466	153,640	0	22,419,981
2009	90,610	10,056,662	95,420	12,480,828	37,987	108,816	8,766	155,569	0	22,428,930
2010	89,983	10,009,876	95,207	12,426,733	38,413	110,039	9,066	157,518	0	22,441,782
2011	89,314	9,958,474	94,949	12,366,890	38,820	111,205	9,361	159,386	0	22,443,865
2012	88,684	9,911,191	94,729	12,312,149	39,241	112,410	9,658	161,309	0	22,454,800
2013	87,991	9,856,829	94,440	12,248,597	39,632	113,528	9,948	163,108	0	22,449,228
2014	87,336	9,806,566	94,190	12,190,124	40,038	114,686	10,240	164,962	0	22,452,483
2015	86,704	9,758,860	93,964	12,134,816	40,448	115,867	10,533	166,848	0	22,461,160
2016	86,034	9,706,695	93,694	12,073,946	40,840	116,989	10,820	168,649	0	22,459,111
2017	85,326	9,650,200	93,381	12,007,668	41,210	118,050	11,101	170,361	0	22,446,467
2018	84,607	9,592,396	93,054	11,939,741	41,572	119,085	11,378	172,035	0	22,430,132
2019	83,928	9,538,875	92,767	11,877,125	41,949	120,164	11,659	173,772	0	22,423,195
2020	83,394	9,479,742	92,462	11,818,887	42,313	121,359	11,945	175,617	0	22,415,854
2021	111,707	5,210,704	126,428	8,376,695	58,933	168,819	16,586	244,338	0	23,047,933
2022	98,551	7,539,987	110,645	10,317,555	51,173	146,589	14,416	212,178	0	23,090,341
2023	124,864	14,387,290	142,211	17,941,704	66,693	191,049	18,757	276,499	0	34,511,393
2024	72,237	10,078,038	79,079	12,078,760	35,653	102,129	10,074	147,856	0	21,054,644
2025	0	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0
TOTAL	3,350,797	360,857,860	3,468,587	449,284,216	1,301,193	2,638,461	302,926	4,242,580	0	794,912,732



TABLE B-23  
Total Transportation and Delta Water Charge for Each Contractor

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County WA	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	11,750	43,787	0	55,537	0	0	0
1963	0	0	0	152,813	192,136	455,508	800,457	0	0	0
1964	0	0	0	173,382	280,386	631,845	1,085,613	9,067	17,954	27,021
1965	0	0	0	248,951	408,713	1,174,620	1,832,284	14,937	28,951	43,888
1966	18,399	0	18,399	275,395	426,816	1,432,330	2,134,341	24,387	46,596	70,983
1967	42,294	0	42,294	365,220	557,040	1,881,841	2,804,101	43,009	81,124	124,133
1968	130,656	0	130,656	416,166	639,241	2,201,715	3,257,122	69,361	129,923	199,284
1969	257,459	0	257,459	482,958	590,074	2,323,649	3,396,681	124,500	231,781	356,281
1970	280,354	0	280,354	547,518	647,180	2,813,515	4,008,213	137,623	256,079	393,702
1971	230,317	0	230,317	484,896	682,127	2,832,680	3,999,703	138,815	258,361	397,176
1972	227,843	0	227,843	613,875	829,344	3,053,482	4,496,501	145,067	270,012	415,079
1973	223,973	32,062	256,035	599,413	723,450	3,146,575	4,469,438	142,147	264,677	406,824
1974	243,427	33,660	277,087	639,558	753,901	3,350,844	4,744,303	143,499	267,221	410,720
1975	240,526	37,068	277,594	696,452	800,043	3,239,928	4,736,423	159,917	297,553	457,470
1976	274,435	41,687	316,122	809,048	950,466	3,388,456	5,147,972	272,084	504,693	776,777
1977	296,818	46,017	342,835	776,801	929,272	3,329,559	5,035,632	282,908	525,116	808,024
1978	277,115	50,165	327,280	864,364	942,886	3,738,701	5,545,951	290,845	539,925	830,770
1979	292,782	54,395	347,177	959,211	1,016,628	3,845,287	5,821,126	289,857	538,222	828,079
1980	314,309	87,365	401,674	1,110,951	1,181,024	4,145,932	6,437,907	328,776	590,765	919,541
1981	350,913	114,461	465,374	1,215,652	1,355,967	4,533,671	7,105,290	356,591	638,645	995,236
1982	472,355	143,767	616,122	1,295,656	1,379,734	4,923,772	7,599,162	377,835	730,249	1,108,084
1983	361,586	165,951	527,537	1,177,497	1,280,624	5,039,476	7,497,597	403,613	747,262	1,150,875
1984	478,635	250,549	729,184	1,472,833	1,486,483	6,664,691	9,844,007	456,185	844,178	1,300,363
1985	738,960	392,447	1,131,407	1,990,336	2,257,978	7,916,817	12,165,131	555,309	1,025,634	1,580,943
1986	1,130,008	725,756	1,855,764	1,850,052	2,043,825	8,306,493	12,200,370	585,494	1,080,657	1,666,151
1987	1,790,845	1,607,766	3,398,611	2,353,380	2,538,185	8,083,435	12,975,000	626,596	1,194,603	1,821,199
1988	2,382,514	2,568,645	4,951,159	2,407,280	2,800,379	7,913,099	13,120,758	743,190	1,462,325	2,205,515
1989	2,638,730	3,831,576	6,470,306	2,494,807	2,655,771	8,084,192	13,234,770	870,561	1,835,451	2,706,012
1990	2,898,853	3,888,376	6,787,229	2,912,186	3,011,486	8,730,292	14,653,964	1,037,426	2,032,102	3,069,528
1991	2,858,745	4,317,504	7,176,249	2,857,495	3,278,642	8,580,875	14,717,012	1,221,264	2,567,706	3,788,970
1992	3,158,661	4,837,802	7,996,463	3,715,187	4,039,945	10,512,613	18,267,745	1,476,885	3,337,789	4,814,674
1993	3,260,792	5,026,024	8,286,816	3,870,686	4,148,597	10,756,502	18,775,790	1,899,420	3,692,182	5,591,602
1994	3,210,270	4,952,421	8,162,691	4,236,881	4,431,650	11,435,424	20,103,955	3,435,441	6,718,831	10,154,272
1995	3,245,949	5,235,888	8,481,837	4,383,212	4,444,218	11,460,420	20,287,850	5,308,984	10,676,434	15,985,418
1996	3,303,952	5,262,615	8,566,567	4,546,037	4,472,078	11,527,139	20,545,254	10,083,711	20,401,231	30,484,942
1997	3,347,338	5,314,736	8,662,074	4,783,881	4,568,329	11,750,838	21,101,048	10,383,205	21,036,661	31,419,866
1998	3,375,097	5,340,569	8,715,666	4,784,514	4,562,026	11,739,502	21,086,042	10,416,368	21,109,883	31,526,251
1999	3,399,590	5,354,423	8,754,013	4,750,998	4,531,160	11,685,022	20,947,180	10,358,595	21,001,929	31,360,524
2000	3,433,825	5,379,852	8,813,677	4,768,266	4,546,665	11,700,971	21,015,902	10,361,862	21,005,277	31,367,139
2001	3,460,714	5,394,650	8,855,364	4,764,084	4,542,567	11,690,178	20,996,829	10,345,381	20,972,339	31,317,720
2002	3,484,012	5,407,035	8,891,047	4,752,001	4,531,273	11,662,308	20,945,582	10,315,190	20,914,642	31,229,832
2003	3,509,933	5,420,752	8,930,685	4,745,085	4,524,689	11,645,633	20,915,407	10,292,078	20,869,790	31,161,868
2004	3,539,153	5,439,459	8,978,612	4,755,771	4,534,183	11,667,249	20,957,203	10,291,022	20,865,140	31,156,162
2005	3,578,636	5,463,326	9,041,962	4,816,959	4,589,784	11,798,658	21,205,401	10,352,355	20,974,180	31,326,535
2006	3,598,878	5,458,536	9,057,414	4,803,511	4,577,234	11,767,773	21,148,518	10,323,612	20,919,009	31,242,621
2007	3,619,530	5,451,618	9,071,148	4,785,848	4,560,841	11,727,751	21,074,440	10,285,885	20,847,569	31,133,454
2008	3,643,062	5,446,136	9,089,198	4,772,161	4,548,076	11,696,349	21,016,586	10,254,007	20,786,721	31,040,728
2009	3,686,230	5,441,524	9,107,754	4,760,200	4,536,776	11,668,055	20,965,031	10,228,795	20,735,119	30,961,914
2010	3,687,891	5,435,275	9,123,166	4,744,094	4,521,698	11,630,769	20,896,561	10,191,931	20,669,643	30,861,574
2011	3,716,268	5,431,638	9,147,906	4,733,835	4,511,952	11,606,178	20,851,965	10,168,943	20,625,699	30,794,642
2012	3,739,286	5,424,535	9,163,821	4,713,554	4,493,062	11,559,824	20,766,440	10,130,338	20,553,369	30,685,707
2013	3,733,737	5,384,027	9,117,764	4,484,326	4,278,794	10,931,737	19,694,857	9,940,509	20,206,106	30,146,615
2014	3,788,598	5,409,633	9,198,231	4,532,007	4,288,324	10,943,068	19,763,399	10,040,747	20,385,018	30,425,765
2015	3,796,593	5,385,273	9,181,866	4,418,887	4,129,371	10,403,263	18,951,521	9,918,311	20,159,839	30,078,150
2016	3,799,814	5,376,492	9,176,306	4,377,449	4,077,470	10,176,272	18,631,191	9,869,555	20,068,579	29,938,134
2017	3,818,527	5,387,284	9,205,811	4,389,568	4,086,342	10,152,871	18,628,781	9,898,114	20,117,990	30,016,104
2018	3,766,246	5,384,602	9,150,848	4,343,870	4,041,165	10,018,708	18,403,743	9,872,087	20,067,972	29,940,059
2019	3,753,014	5,383,700	9,136,714	4,306,936	4,006,436	9,917,043	18,230,415	9,863,728	20,050,464	29,914,192
2020	3,775,090	5,380,663	9,155,753	4,273,454	3,973,209	9,833,139	18,079,802	9,827,624	19,983,078	29,810,702
2021	3,819,532	5,452,487	9,272,019	4,345,416	4,038,531	9,989,194	18,373,141	9,875,172	20,071,773	29,946,945
2022	3,796,186	5,416,116	9,212,302	4,304,430	4,000,739	9,897,104	18,202,273	9,846,745	20,018,750	29,865,495
2023	3,839,983	5,456,185	9,296,168	4,380,595	4,070,200	10,060,772	18,511,567	9,896,879	20,112,204	30,009,083
2024	3,753,073	5,313,851	9,066,924	4,237,296	3,939,232	9,748,390	17,924,918	9,810,328	19,950,059	29,760,387
2025	3,618,492	5,108,981	8,727,473	4,043,596	3,761,771	9,324,666	17,130,033	9,614,577	19,571,524	29,186,101
2026	3,613,855	5,104,461	8,718,316	4,042,981	3,761,179	9,323,066	17,127,226	9,505,202	19,369,532	28,874,734
2027	3,610,180	5,099,526	8,709,706	4,039,443	3,757,763	9,313,524	17,110,730	9,489,873	19,359,298	28,809,674
2028	3,607,846	5,096,242	8,704,088	4,039,741	3,757,884	9,312,475	17,110,100	9,496,793	19,353,373	28,850,166
2029	3,603,335	5,091,222	8,694,557	4,033,475	3,752,115	9,297,815	17,083,405	9,491,163	19,342,941	28,834,104
2030	3,594,558	5,077,540	8,672,098	4,034,235	3,752,734	9,298,855	17,085,824	9,492,629	19,345,420	28,838,049
2031	3,580,411	5,057,167	8,637,578	4,026,113	3,745,239	9,280,568	17,051,920	9,481,358	19,324,566	28,805,924
2032	3,567,984	5,036,782	8,604,766	4,026,065	3,745,146	9,280,065	17,051,276	9,482,697	19,326,877	28,809,674
2033	3,541,118	4,992,956	8,534,074	4,029,522	3,748,259	9,287,238	17,065,019	9,490,143	19,340,557	28,830,700
2034	3,475,088	4,917,838	8,392,926	4,019,721	3,739,067	9,264,097	17,022,885	9,484,625	19,330,405	28,815,030
2035	3,342,136	4,773,119	8,115,255	4,003,581	3,724,262	9,228,007	16,955,850	9,472,514	19,308,238	28,780,752
TOTAL	177,027,664	250,394,178	427,421,842	225,975,168	221,073,423	592,934,380	1,039,982,971	419,924,244	851,885,865	1,271,810,109

Sheet 1 of 4



TABLE B-23  
Total Transportation and Delta Water Charge for Each Contractor (Continued)

(in dollars)										Sheet 2 of 4
Calendar  Year	SAN JOAQUIN VALLEY AREA									
	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total	
				Municipal and Industrial	Agri- cultural					
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	
1961	0	0	0	0	0	0	0	0	0	
1962	0	0	0	0	0	0	0	0	0	
1963	0	0	0	0	0	0	0	0	0	
1964	0	0	2,772	0	0	0	0	0	2,772	
1965	0	0	8,131	74,855	0	0	0	0	80,986	
1966	0	0	12,239	139,659	0	0	0	0	151,898	
1967	0	0	26,690	272,072	0	0	0	0	298,762	
1968	223,391	20,068	55,392	451,817	1,706,358	16,195	19,713	306,712	2,799,646	
1969	239,565	13,000	88,519	532,450	2,722,488	15,839	19,453	456,510	4,087,824	
1970	304,537	36,434	95,646	581,891	3,870,943	20,416	30,476	519,582	5,459,925	
1971	325,713	39,163	96,688	614,140	5,189,407	26,133	34,764	710,727	7,036,735	
1972	378,701	42,360	99,802	640,029	7,124,062	25,403	63,974	1,976,661	10,350,992	
1973	396,265	41,046	98,585	1,034,376	7,274,542	27,749	39,358	779,762	9,691,683	
1974	503,384	42,260	99,557	1,153,314	7,981,968	28,463	42,667	1,038,665	10,890,278	
1975	875,060	42,706	107,727	1,205,723	9,360,523	30,139	48,286	1,551,026	13,021,190	
1976	715,746	45,227	109,149	1,332,436	10,607,144	31,562	52,236	1,438,268	14,331,768	
1977	576,147	41,148	113,623	1,376,170	10,922,355	33,317	54,339	1,134,520	14,251,619	
1978	692,625	43,396	116,675	1,571,899	13,228,128	37,652	59,153	1,167,683	16,917,211	
1979	776,756	49,973	115,454	1,677,331	15,317,991	41,845	70,713	1,720,754	19,770,817	
1980	958,014	51,727	127,151	1,779,469	16,966,719	46,830	95,145	1,655,051	21,680,106	
1981	1,207,618	86,223	134,736	2,438,110	22,558,234	65,333	100,834	2,280,786	28,871,874	
1982	1,241,424	72,351	137,083	2,529,945	24,910,328	69,494	108,438	2,275,996	31,345,059	
1983	1,170,070	54,682	150,881	2,096,829	24,628,427	73,055	89,388	508,458	28,769,790	
1984	1,493,800	131,601	166,351	3,373,577	33,323,483	93,275	121,597	1,548,612	40,252,296	
1985	1,791,601	133,799	190,579	3,948,467	39,929,734	118,017	141,967	2,875,492	49,129,656	
1986	2,025,371	82,222	183,236	4,624,941	43,594,276	136,893	155,485	3,685,665	54,488,089	
1987	1,930,531	99,999	184,939	4,695,732	43,714,820	139,950	156,921	3,846,051	54,768,943	
1988	2,012,826	114,494	196,386	4,823,418	45,556,123	140,384	150,400	3,995,397	56,989,428	
1989	2,235,087	109,752	190,831	4,929,761	49,326,066	144,432	175,599	4,617,220	61,728,748	
1990	2,107,989	92,022	218,861	5,544,592	46,465,309	124,298	155,113	4,086,880	58,795,064	
1991	1,769,724	84,895	270,252	5,211,945	39,346,139	106,209	139,400	3,668,634	50,597,198	
1992	2,886,724	140,018	304,472	6,881,714	65,814,924	185,368	223,873	5,913,897	82,350,988	
1993	2,934,743	142,475	297,006	6,668,550	67,021,399	189,195	228,426	6,007,146	83,488,940	
1994	3,074,661	149,765	284,812	7,026,567	68,831,432	199,424	238,429	6,294,157	86,099,247	
1995	3,079,846	150,058	299,639	7,041,834	68,787,062	199,866	240,025	6,304,715	86,103,045	
1996	3,089,739	150,601	300,619	7,088,544	69,164,734	200,568	239,376	6,324,998	86,559,179	
1997	3,139,608	153,221	301,049	7,213,745	70,300,533	204,053	242,833	6,427,406	87,982,448	
1998	3,139,215	153,231	301,080	7,212,341	70,312,541	204,068	242,953	6,426,636	87,992,065	
1999	3,125,189	152,523	301,065	7,176,057	70,032,875	203,123	242,109	6,397,859	87,630,800	
2000	3,135,611	153,085	301,203	7,201,220	70,293,415	203,865	242,943	6,419,267	87,950,609	
2001	3,134,282	153,038	301,210	7,197,202	70,297,894	203,800	242,943	6,416,568	87,946,937	
2002	3,130,440	152,856	301,238	7,186,528	70,244,200	203,558	242,791	6,408,697	87,870,308	
2003	3,128,465	152,777	301,277	7,180,708	70,234,394	203,447	242,745	6,404,665	87,848,478	
2004	3,135,344	153,157	301,355	7,197,049	70,417,560	203,946	243,331	6,418,807	88,070,549	
2005	3,167,394	154,842	301,571	7,276,711	71,153,989	206,184	245,597	6,484,623	88,990,911	
2006	3,161,610	154,562	301,564	7,261,385	71,062,447	205,811	245,292	6,472,770	88,865,441	
2007	3,155,289	154,253	301,581	7,244,431	70,951,635	205,396	244,996	6,459,812	88,771,393	
2008	3,149,887	153,993	301,606	7,230,029	70,865,591	205,047	244,723	6,448,740	88,599,616	
2009	3,145,720	153,793	301,635	7,218,064	70,803,962	204,764	244,527	6,440,195	88,512,660	
2010	3,140,394	153,531	301,678	7,203,050	70,711,503	204,399	244,287	6,429,278	88,388,120	
2011	3,136,865	153,363	301,687	7,192,739	70,663,019	204,160	244,141	6,422,046	88,318,020	
2012	3,129,189	152,979	301,700	7,171,870	70,519,971	203,632	243,730	6,406,289	88,129,360	
2013	3,077,036	150,284	301,854	7,038,988	69,389,584	200,017	240,259	6,299,184	86,697,206	
2014	3,118,758	152,466	299,138	7,142,473	70,337,389	202,911	243,222	6,384,872	87,881,222	
2015	3,085,469	150,751	295,777	6,982,259	69,625,147	200,609	241,084	6,316,526	86,897,622	
2016	3,078,688	150,309	289,667	6,893,980	69,459,125	200,007	240,571	6,298,514	86,608,861	
2017	3,098,821	151,475	275,337	6,815,831	69,975,309	201,540	242,150	6,343,964	87,104,427	
2018	3,098,333	151,466	252,265	6,694,282	69,991,967	192,857	242,204	6,342,983	86,966,357	
2019	3,100,407	151,589	243,660	6,637,398	70,065,996	192,491	242,431	6,347,264	86,981,236	
2020	3,096,581	151,399	241,771	6,590,119	70,048,640	191,972	242,467	6,339,428	86,902,377	
2021	3,189,902	156,234	240,649	6,761,078	72,710,018	198,255	251,659	6,531,061	90,038,856	
2022	3,140,533	153,676	240,015	6,647,427	71,322,215	194,785	246,855	6,429,683	88,375,189	
2023	3,235,285	158,584	239,586	6,839,686	74,011,056	201,282	256,174	6,624,256	91,565,909	
2024	3,050,252	149,000	239,048	6,454,943	68,722,015	188,517	237,924	6,244,293	85,285,992	
2025	2,819,182	137,148	238,484	5,971,790	62,346,831	172,822	215,811	5,769,922	77,671,990	
2026	2,819,227	137,151	238,212	5,969,836	62,348,331	172,789	215,811	5,770,013	77,671,370	
2027	2,818,608	137,119	237,555	5,965,206	62,333,067	172,703	215,780	5,768,743	77,648,781	
2028	2,819,656	137,173	235,087	5,965,785	62,357,640	172,752	215,843	5,770,892	77,674,828	
2029	2,818,573	137,117	234,762	5,959,908	62,333,060	172,614	215,771	5,768,673	77,640,478	
2030	2,819,871	137,184	234,475	5,960,055	62,362,697	172,636	215,856	5,771,334	77,674,108	
2031	2,819,471	137,183	232,860	5,940,389	62,352,819	172,211	215,835	5,770,513	77,641,261	
2032	2,818,715	137,125	232,833	5,940,700	62,335,634	172,169	215,786	5,768,965	77,621,927	
2033	2,819,957	137,188	232,548	5,939,172	62,366,407	172,125	215,847	5,771,514	77,654,758	
2034	2,818,876	137,132	231,925	5,929,819	62,340,504	171,900	215,791	5,769,293	77,615,240	
2035	2,815,302	136,949	231,159	5,911,521	62,261,633	171,415	215,511	5,761,952	77,505,442	
TOTAL	159,447,663	8,094,349	15,443,649	355,677,931	3,525,505,731	10,097,936	12,496,131	321,537,525	4,408,300,915	

TABLE B-23  
Total Transportation and Delta Water Charge for Each Contractor (Continued)

(in dollars)

Sheet 3 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley - East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline - Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	33,938	0	0	0	0	0	0	0	52,694	0
1964	63,968	27,939	14,690	4,450	37,841	1,164	28,956	8,354	84,285	35,635
1965	120,616	53,917	25,533	7,320	41,467	2,119	51,194	15,485	137,397	35,953
1966	219,384	102,964	45,489	12,691	74,379	3,817	91,931	28,146	236,425	62,500
1967	424,383	214,306	87,555	23,864	143,754	7,406	178,096	54,921	440,559	117,496
1968	747,058	498,108	155,023	42,148	255,022	13,065	315,436	96,907	794,222	212,139
1969	1,074,996	752,338	228,767	62,171	376,637	18,978	465,130	140,158	1,224,544	326,737
1970	1,397,865	954,878	320,130	91,093	527,319	25,615	641,744	187,654	1,805,979	474,863
1971	1,729,404	1,151,997	439,124	130,337	723,565	32,310	868,797	234,711	2,577,508	669,584
1972	2,209,092	1,395,766	610,898	188,120	1,002,233	44,283	1,191,904	291,342	3,804,527	962,123
1973	2,361,546	1,446,648	755,237	193,324	1,229,860	46,590	1,282,871	317,279	4,074,759	973,430
1974	2,482,248	1,542,763	778,863	206,475	1,269,955	49,469	1,341,598	335,571	4,513,438	1,117,804
1975	2,699,899	1,633,866	824,404	221,757	1,345,584	53,785	1,427,440	359,188	4,689,946	1,223,904
1976	3,164,343	1,671,307	881,593	234,638	1,438,555	58,278	1,503,784	385,223	4,890,770	1,295,638
1977	3,146,240	1,759,808	782,236	247,658	1,281,094	54,758	1,591,044	410,609	5,147,550	1,361,976
1978	3,592,628	1,892,119	981,095	257,984	1,581,393	57,351	1,637,894	424,022	5,145,492	1,391,071
1979	4,267,350	1,972,050	1,066,735	270,364	1,704,168	60,842	1,812,846	453,785	5,190,893	1,356,145
1980	4,953,468	2,112,360	1,176,312	297,997	1,905,154	68,180	1,984,869	503,223	5,702,689	1,499,304
1981	5,781,202	2,553,252	1,330,678	331,892	2,154,809	101,149	2,298,941	606,962	6,561,629	1,711,737
1982	5,545,193	2,751,241	1,421,619	350,426	2,303,880	83,152	2,284,295	648,184	6,822,873	1,936,225
1983	6,298,551	2,830,392	1,940,644	384,225	3,137,072	89,141	2,476,975	664,105	7,034,990	1,826,973
1984	7,624,127	4,010,767	3,023,407	498,204	4,864,968	96,783	2,731,590	729,848	8,079,346	2,597,594
1985	9,594,757	4,424,916	3,905,137	610,805	6,277,871	105,989	2,972,454	951,275	9,044,782	2,729,644
1986	9,452,955	4,995,781	4,333,911	650,092	6,970,921	130,740	3,100,551	1,227,903	9,190,459	3,412,011
1987	9,564,133	4,910,124	4,220,637	683,406	6,878,220	242,401	3,176,728	1,271,430	10,578,345	3,426,974
1988	9,135,065	5,087,970	4,280,228	710,960	7,049,710	163,725	3,369,094	1,072,462	11,130,240	3,292,773
1989	11,657,743	5,429,793	4,732,248	733,248	6,176,292	223,918	3,476,359	1,848,176	11,310,611	3,687,825
1990	12,742,892	5,693,516	4,843,859	738,741	7,988,321	328,001	3,618,028	1,939,792	11,734,982	4,337,788
1991	11,645,969	5,613,869	3,931,256	749,769	6,483,066	269,952	8,353,251	2,020,266	12,959,381	4,165,295
1992	17,036,363	7,781,705	5,488,021	996,575	9,050,694	436,867	11,719,718	3,121,518	16,017,088	5,396,999
1993	17,615,157	8,137,469	5,545,450	1,023,365	9,145,396	440,934	11,865,137	3,292,587	17,343,615	5,475,306
1994	19,290,328	9,394,150	6,058,170	1,102,810	9,991,069	482,683	12,783,371	3,609,205	18,986,082	5,823,570
1995	19,809,967	9,896,960	6,075,848	1,117,816	10,020,224	484,357	12,670,818	3,621,745	18,872,840	5,783,516
1996	20,957,388	9,982,696	6,122,574	1,245,203	10,097,296	488,663	13,127,643	3,654,068	19,479,850	5,466,366
1997	22,215,174	10,472,234	6,305,513	1,283,302	10,399,021	505,438	13,566,201	3,780,143	21,538,341	5,572,101
1998	22,830,287	10,326,549	6,339,780	1,366,385	10,455,573	504,405	13,538,170	3,772,414	20,533,553	5,810,951
1999	23,247,842	10,221,646	6,210,143	1,307,280	10,241,726	498,700	13,387,581	3,729,483	19,063,507	5,553,037
2000	24,010,735	10,268,189	6,285,741	1,391,472	10,366,442	501,431	13,458,859	3,749,995	20,061,645	5,802,718
2001	24,565,531	10,257,946	6,279,397	1,419,697	10,355,983	500,651	13,437,779	3,744,151	20,124,098	5,860,885
2002	25,053,594	10,200,937	6,234,902	1,416,510	10,282,589	498,508	13,380,799	3,728,055	19,668,394	5,811,011
2003	25,583,124	10,185,991	6,207,735	1,422,133	10,237,779	497,375	13,350,091	3,719,526	19,355,571	5,792,453
2004	26,244,511	10,221,057	6,249,045	1,476,233	10,305,935	498,938	13,390,653	3,731,277	20,428,954	5,945,539
2005	27,359,589	10,430,182	6,371,213	1,527,919	10,507,430	509,115	13,655,864	3,807,743	21,307,601	6,092,334
2006	27,238,598	10,388,356	6,343,403	1,538,626	10,461,558	506,783	13,594,352	3,790,234	21,823,541	6,124,131
2007	27,074,357	10,298,408	6,300,659	1,537,559	10,391,070	503,624	13,510,885	3,766,494	22,168,338	6,118,009
2008	26,952,308	10,268,230	6,266,071	1,537,797	10,334,018	501,282	13,448,901	3,748,853	22,505,377	6,115,355
2009	26,845,621	10,128,270	6,246,759	1,552,014	10,302,173	499,228	13,394,738	3,733,417	23,089,209	6,162,034
2010	26,699,326	10,159,467	6,216,754	1,563,675	10,252,691	496,418	13,320,621	3,712,279	23,616,262	6,197,897
2011	26,606,081	10,127,289	6,199,476	1,571,128	10,224,198	494,619	13,273,119	3,698,798	24,186,878	6,248,255
2012	26,423,130	10,052,063	6,151,494	1,561,993	10,145,055	491,057	13,180,539	3,672,347	24,463,155	6,238,786
2013	25,396,910	9,663,145	5,903,527	1,485,895	9,722,457	472,092	12,683,269	3,529,291	23,591,011	5,974,260
2014	26,071,529	9,912,477	6,079,751	1,564,169	10,027,390	484,427	13,006,576	3,622,486	25,101,091	6,287,457
2015	25,364,985	9,633,070	5,916,060	1,522,666	9,757,402	471,005	12,657,805	3,521,800	24,582,300	6,154,277
2016	25,076,579	9,506,444	5,827,236	1,475,298	9,610,903	465,664	12,522,715	3,481,546	23,994,294	6,019,621
2017	25,231,716	9,540,784	5,881,683	1,503,556	9,700,723	468,982	12,614,858	3,506,685	24,714,734	6,151,248
2018	24,939,030	9,305,448	5,819,339	1,487,497	9,597,908	463,726	12,483,560	3,467,765	24,656,470	6,110,345
2019	24,640,944	9,102,006	5,751,237	1,469,117	9,485,598	458,322	12,345,325	3,428,370	24,314,353	6,045,223
2020	24,142,309	8,864,658	5,618,324	1,429,754	9,266,397	448,211	12,075,572	3,354,759	23,614,831	5,898,530
2021	24,579,317	8,777,678	5,553,414	1,411,552	9,159,347	446,097	11,949,503	3,342,182	23,271,753	5,835,589
2022	24,783,735	8,607,390	5,457,262	1,371,512	9,000,768	441,005	11,783,486	3,304,730	22,502,295	5,687,518
2023	25,441,682	8,680,198	5,485,382	1,386,153	9,047,162	443,638	11,829,063	3,325,085	22,766,939	5,773,833
2024	25,495,559	8,463,818	5,419,881	1,375,941	8,939,087	436,633	11,675,712	3,272,350	22,589,014	5,748,482
2025	25,240,782	8,181,967	5,258,494	1,321,486	8,672,929	423,733	11,354,632	3,175,516	21,601,537	5,546,837
2026	25,230,684	8,160,271	5,254,342	1,325,014	8,666,088	423,527	11,335,649	3,174,133	21,635,125	5,589,011
2027	25,198,822	8,132,269	5,244,524	1,323,363	8,649,897	422,980	11,312,775	3,170,081	21,590,956	5,617,097
2028	25,215,952	8,137,697	5,245,431	1,323,773	8,651,392	423,242	11,315,221	3,172,129	21,590,454	5,657,774
2029	25,175,053	8,088,240	5,232,125	1,316,126	8,629,445	422,553	11,296,070	3,166,966	21,453,376	5,669,451
2030	25,186,669	8,066,680	5,237,851	1,321,286	8,638,893	422,744	11,300,565	3,168,436	21,544,323	5,728,702
2031	25,076,529	7,961,959	5,214,082	1,315,913	8,599,695	420,842	11,250,025	3,154,281	21,446,696	5,744,915
2032	25,065,596	7,921,046	5,208,170	1,309,753	8,589,938	420,656	11,247,103	3,152,899	21,337,193	5,766,818
2033	25,023,124	7,896,420	5,199,677	1,305,938	8,575,933	419,934	11,232,177	3,147,504	21,272,401	5,794,040
2034	24,886,917	7,853,844	5,180,580	1,307,204	8,544,443	417,649	11,177,827	3,130,366	21,291,868	5,830,766
2035	24,738,509	7,576,482	5,176,630	1,328,406	8,537,937	415,075	11,115,686	3,111,866	21,678,519	5,936,309
TOTAL	1,214,592,936	474,808,340	301,784,701	69,875,023	496,862,662	22,906,824	602,894,813	170,292,339	1,109,736,747	304,200,496

Note: As of January 1, 1992, Castaic Lake Water Agency will assume all rights and obligations granted to Devil's Den Water District according to its long-term water supply contract with the state of California.

TABLE B-23

## Total Transportation and Delta Water Charge for Each Contractor (Continued)

(in dollars)

Sheet 4 of 4

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Geronimo Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	55,537
1963	0	703,634	0	790,266	0	0	0	0	56,515	1,647,238
1964	22,138	1,282,655	9,546	1,621,621	0	0	0	0	85,184	2,822,211
1965	22,243	2,217,785	18,072	2,749,101	0	0	411	411	129,707	4,836,377
1966	38,604	3,965,502	33,988	4,915,820	0	0	574	574	148,332	7,440,347
1967	72,468	7,821,098	69,285	9,655,190	0	0	571	571	204,956	13,130,007
1968	130,897	15,554,109	144,998	18,959,132	0	1,050	1,449	2,499	280,902	25,629,241
1969	201,845	23,512,195	218,538	28,603,034	0	1,225	4,172	5,397	352,138	37,058,814
1970	294,150	31,093,031	277,838	38,092,159	0	3,848	17,363	21,211	389,947	48,645,511
1971	415,646	40,569,832	347,617	49,890,432	0	4,546	19,448	23,994	378,912	61,957,269
1972	544,537	55,713,441	428,109	68,386,375	0	4,929	21,434	26,363	403,970	84,307,123
1973	595,677	60,350,003	441,515	74,068,739	0	7,059	22,062	29,121	380,009	89,301,849
1974	619,351	66,800,391	461,666	81,519,592	0	8,336	22,692	31,028	402,855	98,275,863
1975	652,768	72,637,558	484,578	88,254,677	0	9,416	23,806	33,222	409,327	107,189,903
1976	676,671	75,728,891	481,831	92,411,522	0	7,004	23,540	30,544	431,578	113,446,283
1977	705,021	74,173,327	513,398	91,174,519	0	16,917	24,343	41,260	426,840	122,080,729
1978	717,612	62,777,772	529,608	100,966,041	0	12,635	24,508	37,143	433,057	125,077,453
1979	721,491	84,456,495	532,979	103,866,143	0	16,575	28,635	45,210	450,378	131,128,930
1980	871,077	93,918,640	590,492	115,583,765	0	19,834	26,845	46,679	509,048	145,578,720
1981	956,042	113,114,787	678,026	138,180,906	0	21,682	34,847	56,529	517,353	176,192,562
1982	1,034,093	117,970,240	737,699	143,889,120	0	16,117	43,282	59,399	516,009	185,132,955
1983	1,087,652	120,012,836	858,195	148,641,751	0	15,202	27,344	42,546	558,527	187,188,623
1984	1,216,753	159,421,226	937,193	195,831,806	20,590	15,442	28,957	64,989	562,367	248,585,012
1985	1,311,934	198,644,832	994,512	241,569,008	24,050	16,976	32,399	73,425	686,848	306,336,418
1986	1,352,143	219,060,008	1,064,168	264,941,643	31,753	18,145	33,688	83,586	640,060	335,875,663
1987	1,391,613	207,494,792	1,077,751	254,916,554	37,071	17,794	33,875	88,740	689,197	328,658,244
1988	1,478,088	224,477,723	1,141,767	272,389,805	48,413	19,264	36,172	103,849	711,453	350,471,967
1989	1,531,953	251,099,263	1,258,077	302,149,759	64,992	21,276	39,079	125,347	757,144	387,172,086
1990	1,602,185	288,615,414	1,581,521	345,765,040	67,499	21,315	39,735	128,549	806,260	430,005,634
1991	1,776,581	282,660,180	1,980,309	342,609,144	185,737	23,217	42,684	251,638	840,339	419,980,550
1992	2,059,374	369,485,909	2,207,938	450,798,769	220,902	28,342	48,063	297,307	914,873	565,440,819
1993	2,099,356	380,807,286	2,199,561	464,990,619	226,715	29,104	49,830	305,649	919,098	582,358,514
1994	2,114,704	423,972,142	2,326,516	515,934,800	226,960	29,135	50,960	307,055	918,612	641,680,632
1995	2,115,548	423,409,337	2,340,619	516,219,595	227,213	29,166	52,154	308,533	926,034	648,312,312
1996	2,113,160	439,432,803	3,484,632	535,652,342	227,458	29,197	53,347	310,002	929,166	683,047,452
1996	2,068,842	459,701,670	3,711,998	559,119,978	227,714	29,229	54,542	311,485	930,307	709,527,206
1998	2,198,747	457,919,415	3,726,278	559,322,487	227,964	29,260	55,737	312,961	930,147	709,885,619
1999	2,028,677	448,970,753	3,743,399	548,203,774	228,401	39,613	57,056	325,070	930,087	698,151,448
2000	4,547,313	454,398,972	3,820,935	558,664,447	228,833	49,975	58,583	337,391	930,572	709,079,737
2001	4,553,791	454,494,437	3,865,782	559,460,128	229,199	60,281	60,098	349,578	930,592	709,857,148
2002	4,484,028	450,981,395	3,893,042	555,633,764	229,639	70,654	61,626	361,919	930,690	705,863,142
2003	4,438,203	449,536,975	3,934,552	554,261,508	230,052	80,999	63,149	374,200	930,822	704,422,968
2004	4,510,747	452,755,201	3,998,232	559,756,322	230,473	91,359	64,675	386,507	931,088	710,236,443
2005	4,602,232	463,056,252	4,139,974	573,367,448	230,863	101,655	66,194	398,712	931,832	725,262,801
2006	4,586,865	461,493,062	4,145,048	572,034,557	231,275	111,992	67,926	411,193	931,810	723,691,554
2007	4,542,832	457,232,165	4,132,630	567,637,050	231,712	122,392	69,664	423,768	931,864	718,989,117
2008	4,504,587	455,386,223	4,140,305	565,709,307	232,110	132,682	71,393	436,195	931,949	716,823,579
2009	4,499,250	453,585,026	4,142,535	564,280,274	232,532	133,899	73,156	439,587	932,052	715,199,272
2010	4,486,662	451,494,982	4,137,987	562,355,021	232,958	135,122	74,919	442,999	932,197	712,999,638
2011	4,484,421	450,403,150	4,122,689	561,640,101	233,365	136,288	76,887	446,540	932,224	712,131,398
2012	4,440,514	448,944,924	4,088,794	557,853,901	233,786	137,493	78,856	450,135	932,280	707,979,654
2013	4,202,385	427,762,126	3,910,685	534,297,053	234,177	138,611	81,027	453,815	888,912	681,296,222
2014	4,400,375	441,986,478	4,027,637	552,571,843	234,581	139,769	83,200	457,550	881,752	701,160,129
2015	4,263,067	428,809,822	3,902,728	536,556,787	234,993	140,950	85,173	461,116	831,200	682,958,262
2016	4,143,394	421,945,694	3,852,030	527,921,418	235,385	142,072	87,388	464,845	813,973	673,554,728
2017	4,213,305	426,209,462	3,882,197	533,619,933	235,755	143,133	87,671	466,559	773,815	679,815,430
2018	4,160,495	418,470,506	3,806,957	524,769,046	236,117	144,168	87,946	468,231	697,205	670,395,489
2019	4,094,053	410,991,655	3,738,289	515,864,492	236,544	145,247	85,557	467,298	632,292	661,226,639
2020	3,970,485	399,752,659	3,645,968	502,082,457	237,958	149,442	74,018	461,418	611,497	647,104,006
2021	3,904,675	387,355,186	3,616,543	489,202,838	253,478	193,902	77,519	524,899	607,670	637,966,368
2022	3,784,601	381,217,214	3,555,079	481,496,595	245,718	171,672	73,941	491,331	607,003	628,250,188
2023	3,812,441	386,513,519	3,583,674	488,088,779	261,238	216,132	78,282	555,652	606,337	638,633,495
2024	3,774,361	380,857,617	3,508,231	481,556,666	230,198	227,212	69,597	427,007	605,883	624,627,777
2025	3,620,487	366,323,489	3,397,363	464,119,252	194,545	25,083	59,521	279,149	604,425	597,718,423
2026	3,621,727	365,475,684	3,390,548	463,281,803	194,545	25,083	59,520	279,148	604,001	596,556,598
2027	3,613,462	364,263,432	3,380,800	461,920,458	194,545	25,083	59,517	279,145	603,134	595,131,105
2028	3,613,365	364,701,024	3,383,800	462,431,254	194,545	25,083	59,516	279,144	602,058	595,651,638
2029	3,594,172	362,584,525	3,366,001	459,994,103	194,545	25,083	59,514	279,142	600,545	593,126,334
2030	3,606,069	362,453,474	3,357,857	460,033,749	194,545	25,083	59,513	279,141	599,185	593,182,154
2031	3,589,168	358,961,821	3,320,120	456,056,046	194,545	25,083	59,511	279,139	596,116	589,067,984
2032	3,574,880	357,348,833	3,304,905	454,247,790	194,545	25,083	59,510	279,138	596,454	587,211,025
2033	3,564,629	356,626,081	3,296,572	453,354,430	194,545	25,083	59,509	279,137	595,763	586,313,881
2034	3,561,560	355,027,499	3,280,614	451,490,937	194,545	25,083	59,508	279,136	592,096	584,208,250
2035	3,604,287	346,538,370	3,194,660	442,952,736	194,545	25,083	59,507	279,135	587,727	575,176,897
TOTAL	185,808,529	21,153,555,931	175,899,980	26,283,219,321	10,316,316	4,055,874	3,588,695	17,960,885	47,786,551	33,496,482,594

TABLE B-24  
Equivalent Unit Charge for Water Supply for Each Contractor <sup>a</sup>

(in dollars per acre-foot)

Project Service Area and Water Supply Contractor	Transportation Charge					Delta Water Charge	Water system Revenue Bond Surcharge	Total Equivalent Unit Charge
	Capital Cost Component	Minimum OMP&R Component	Off- Aqueduct Component	Variable OMP&R Component	Total			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<b>FEATHER RIVER AREA</b>								
City of Yuba City	0.00	0.00	0.00	0.00	0.00	26.70	ERR	ERR
County of Butte	0.00	0.00	0.00	0.00	0.00	11.43	0.03	11.46
Plumas County Flood Control and Water Conservation District	19.38	2.31	0.00	0.00	21.69	21.57	0.40	43.66
Feather River Area	1.27	0.15	0.00	0.00	1.42	8.23	0.20	9.85
<b>NORTH BAY AREA</b>								
Napa County Flood Control and Water Conservation District	112.78	34.59	3.98	14.31	165.66	13.74	1.36	180.76
Solano County Water Agency	83.90	29.51	3.55	9.93	126.89	21.32	1.39	149.60
North Bay Area	95.18	31.49	3.71	11.64	142.02	18.36	1.38	161.76
<b>SOUTH BAY AREA</b>								
Alameda County Flood Control and Water Conservation District, Zone 7	17.33	25.10	8.26	23.75	74.44	19.56	0.45	94.45
Alameda County Water District	19.14	21.09	7.35	20.04	67.62	17.56	0.44	85.62
Santa Clara Valley Water District	18.18	16.06	6.36	15.36	55.96	13.65	0.32	69.93
South Bay Area	18.22	18.40	6.84	17.53	60.99	15.29	0.36	76.64
<b>SAN JOAQUIN VALLEY AREA</b>								
County of Kings	4.21	3.42	3.30	8.17	19.10	16.82	0.38	36.30
Dudley Ridge Water District	4.93	3.98	2.70	7.22	18.83	14.78	0.35	33.96
Empire West Side Irrigation District	2.68	3.22	2.26	6.37	14.53	15.89	0.28	30.70
Kern County Water Agency	8.92	8.26	4.22	10.41	31.81	17.16	0.59	49.56
Oak Flat Water District	1.94	1.86	1.71	4.56	10.07	13.99	0.28	24.34
Tulare Lake Basin Water Storage District	5.16	4.18	2.61	7.56	19.51	15.41	0.38	35.30
San Joaquin Valley Area	8.26	7.57	3.96	9.91	29.69	16.84	0.55	47.08
<b>CENTRAL COASTAL AREA</b>								
San Luis Obispo County Flood Control and Water Conservation District	253.02	83.25	19.31	71.65	427.23	32.12	1.27	460.62
Santa Barbara County Flood Control and Water Conservation District	289.83	92.26	19.71	71.06	472.86	31.76	1.28	505.90
Central Coastal Area	276.87	89.09	19.57	71.27	456.79	31.88	1.28	489.95
<b>SOUTHERN CALIFORNIA AREA</b>								
Antelope Valley-East Kern Water Agency	39.99	33.92	26.36	83.59	183.86	26.53	0.90	211.29
Castaic Lake Water Agency	46.34	32.33	21.65	41.71	142.03	20.80	0.73	163.56
Coachella Valley Water District	42.21	36.10	41.01	84.14	203.46	18.33	0.67	222.46
Crestline-Lake Arrowhead Water Agency	80.95	62.75	32.77	99.28	275.75	28.70	1.14	305.59
Desert Water Agency	42.89	36.68	41.27	85.16	206.00	18.40	0.68	225.08
Little Rock Creek Irrigation District	38.61	31.75	29.70	90.15	190.21	24.88	0.80	215.89
Mojave Water Agency	64.32	56.46	35.52	124.21	280.51	31.13	1.10	312.74
Palmdale Water District	44.01	36.38	34.35	102.89	217.63	30.83	0.93	249.39
San Bernardino Valley Municipal Water District	126.89	101.40	27.74	81.96	337.99	41.73	1.64	381.36
San Gabriel Valley Municipal Water District	97.74	80.22	36.83	70.36	285.15	34.17	1.33	320.65
San Geronimo Pass Water Agency	158.99	130.06	21.29	110.29	420.63	46.35	2.11	469.09
The Metropolitan Water District of Southern California	59.97	42.73	34.11	61.88	198.69	23.01	0.87	222.57
Ventura County Flood Control District	83.48	57.86	27.70	93.69	262.73	31.67	1.40	295.80
Southern California Area	60.58	44.20	33.47	65.24	203.49	23.83	0.90	228.22
<b>ALL AREAS</b>	<b>38.48</b>	<b>27.73</b>	<b>19.21</b>	<b>38.93</b>	<b>124.35</b>	<b>20.36</b>	<b>2.51</b>	<b>147.22</b>

a) Hypothetical charges, which, if assessed on all entitlement water delivered to date, all surplus water delivered prior to May 1, 1973, and all entitlement water now estimated to be delivered during the remainder of the project repayment period (Table B-5B), would provide a sum at the end of the period financially equivalent to all Transportation Charge and Delta Water Charge payments required under a water supply contract, considering interest at the Project Interest Rate, 4.713 percent per annum.

TABLE B-25

Equivalent Unit Transportation Costs of Water Delivered from or Through Each Aqueduct Reach<sup>a</sup>

(in dollars per acre-foot)

Aqueduct Reach	Unit Costs of Reach(b)						Cumulative Unit Costs from the Delta					
	Capital Costs	Water System Revenue Bond Surcharge (c)	Minimum OMP&R	Off-Aqueduct Costs	Variable OMP&R	Total	Capital Costs	Water System Revenue Bond Surcharge (c)	Minimum OMP&R	Off-Aqueduct Costs	Variable OMP&R	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
<b>North Bay Aqueduct</b>												
1	43.37	6.55	13.11	1.49	4.39	68.91	43.37	6.55	13.11	1.49	4.39	68.91
2	46.67	7.05	5.14	0.00	0.00	58.86	90.04	13.60	18.25	1.49	4.39	127.77
3A	8.91	1.35	13.10	2.30	6.30	31.96	98.95	14.95	31.35	3.79	10.69	159.73
3B	47.78	7.22	22.25	3.07	10.91	91.23	137.82	20.82	40.50	4.56	15.30	219.00
<b>South Bay Aqueduct</b>												
1	6.50	0.98	11.75	5.33	12.64	37.20	8.23	1.24	13.97	7.66	19.37	50.47
2	0.59	0.09	1.42	0.00	0.00	2.10	8.82	1.33	15.39	7.66	19.37	52.57
4	1.95	0.29	2.28	0.00	0.00	4.52	10.77	1.62	17.67	7.66	19.37	57.09
5	4.18	0.63	1.81	0.00	0.00	6.62	14.95	2.25	19.48	7.66	19.37	63.71
6	0.24	0.04	0.24	0.00	0.00	0.52	15.19	2.29	19.72	7.66	19.37	64.23
7	1.89	0.29	0.32	0.00	0.00	2.50	17.08	2.58	20.04	7.66	19.37	66.73
8	2.59	0.39	0.41	0.00	0.00	3.39	19.67	2.97	20.45	7.66	19.37	70.12
9	5.33	0.81	2.05	0.00	0.00	8.19	25.00	3.78	22.50	7.66	19.37	78.31
<b>California Aqueduct</b>												
1	1.73	0.26	2.22	2.33	6.73	13.27	1.73	0.26	2.22	2.33	6.73	13.27
2A	1.09	0.16	0.43	0.00	0.00	1.68	2.82	0.42	2.65	2.33	6.73	14.95
2B	0.55	0.08	0.17	0.00	0.00	0.80	3.37	0.50	2.82	2.33	6.73	15.75
3	0.44	0.07	0.18	0.00	0.00	0.69	3.81	0.57	3.00	2.33	6.73	16.44
4	0.77	0.12	1.12	1.10	3.00	6.11	4.58	0.69	4.12	3.43	9.73	22.55
5	0.59	0.09	0.23	0.00	0.00	0.91	5.17	0.78	4.35	3.43	9.73	23.46
6	0.15	0.02	0.11	0.00	0.00	0.28	5.32	0.80	4.46	3.43	9.73	23.74
7	0.66	0.10	0.28	0.00	0.00	1.04	5.98	0.90	4.74	3.43	9.73	24.78
8C	0.02	0.00	0.06	0.00	0.00	0.08	6.00	0.90	4.80	3.43	9.73	24.86
8D	0.34	0.05	0.24	0.00	0.00	0.63	6.34	0.95	5.04	3.43	9.73	25.49
9	0.28	0.04	0.22	0.00	0.00	0.54	6.62	0.99	5.26	3.43	9.73	26.03
10A	0.29	0.04	0.25	0.00	0.00	0.58	6.91	1.03	5.51	3.43	9.73	26.61
11B	0.43	0.06	0.18	0.00	0.00	0.67	7.34	1.09	5.69	3.43	9.73	27.28
12D	0.40	0.06	0.18	0.00	0.00	0.64	7.74	1.15	5.87	3.43	9.73	27.92
12E	0.27	0.04	0.27	0.00	0.00	0.58	8.01	1.19	6.14	3.43	9.73	28.50
13B	0.61	0.09	0.32	0.00	0.00	1.02	8.62	1.28	6.46	3.43	9.73	29.52
14A	2.29	0.35	2.26	1.94	5.29	12.13	10.91	1.63	8.72	5.37	15.02	41.65
14B	0.36	0.05	0.29	0.00	0.00	0.70	11.27	1.68	9.01	5.37	15.02	42.35
14C	0.31	0.05	0.22	0.00	0.00	0.58	11.58	1.73	9.23	5.37	15.02	42.93
15A	1.68	0.25	2.38	2.37	6.53	13.21	13.26	1.98	11.61	7.74	21.55	56.14
16A	2.78	0.42	3.66	5.13	14.04	26.03	16.04	2.40	15.27	12.87	35.59	82.17
17E	9.44	1.43	10.18	17.93	49.76	88.74	25.48	3.83	25.45	30.80	85.35	170.91
17F	2.48	0.37	0.13	0.00	0.00	2.98	27.96	4.20	25.58	30.80	85.35	173.89
18A	2.15	0.32	1.34	0.00	(2.54)	1.27	30.11	4.52	26.92	30.80	82.81	175.16
19	1.64	0.25	0.84	0.00	0.00	2.73	31.75	4.77	27.76	30.80	82.81	177.89
19C	0.00	0.00	0.00	0.00	0.00	0.00	31.75	4.77	27.76	30.80	82.81	177.89
20A	1.30	0.20	0.94	0.00	0.00	2.44	33.05	4.97	28.70	30.80	82.81	180.33
20B	1.55	0.23	0.67	0.00	0.00	2.45	34.60	5.20	29.37	30.80	82.81	182.78
21	0.78	0.12	0.53	0.00	0.00	1.43	35.38	5.32	29.90	30.80	82.81	184.21
22A	0.79	0.12	0.42	0.00	0.00	1.33	36.17	5.44	30.32	30.80	82.81	185.54
22B	7.80	1.18	8.47	5.40	15.74	38.59	43.97	6.62	38.79	36.20	98.55	224.13
23	1.78	0.27	0.51	0.00	(4.57)	(2.01)	45.75	6.89	39.30	36.20	93.98	222.12
24	4.27	0.65	1.77	0.00	0.00	6.69	50.02	7.54	41.07	36.20	93.98	228.81
25	2.53	0.38	0.08	0.00	0.00	2.99	52.55	7.92	41.15	36.20	93.98	231.80
26A	2.99	0.45	5.43	0.00	(24.79)	(15.92)	55.54	8.37	46.58	36.20	69.19	215.88
28G	5.10	0.77	1.27	0.00	0.00	7.14	60.64	9.14	47.85	36.20	69.19	223.02
28H	4.92	0.74	1.09	0.00	0.00	6.75	65.56	9.88	48.94	36.20	69.19	229.77
28J	65.87	9.95	33.65	0.00	0.00	109.47	131.43	19.83	82.59	36.20	69.19	339.24
<b>West Branch</b>												
29A	3.10	0.47	5.65	2.40	6.39	18.01	31.06	4.67	31.23	33.20	91.74	191.90
29F	2.23	0.34	0.82	0.00	0.00	3.39	33.29	5.01	32.05	33.20	91.74	195.29
29G	7.48	1.13	2.89	0.00	(12.67)	(1.17)	40.77	6.14	34.94	33.20	79.07	194.12
29H	4.56	0.69	3.18	0.00	0.00	8.43	45.33	6.83	38.12	33.20	79.07	202.55
29J	7.99	1.21	0.75	0.00	(22.75)	(12.80)	53.32	8.04	38.87	33.20	56.32	189.75
30	12.77	1.93	2.72	0.00	0.00	17.42	66.09	9.97	41.59	33.20	56.32	207.17
<b>Coastal Branch</b>												
31A	6.19	0.94	13.87	1.86	4.56	27.42	12.53	1.89	18.91	5.29	14.29	52.91
33A	198.98	30.07	38.03	16.42	47.93	331.43	211.51	31.96	56.94	21.71	62.22	384.34
34	29.33	4.43	10.53	0.00	0.00	44.29	240.84	36.39	67.47	21.71	62.22	428.63
35	42.24	6.38	5.83	0.00	0.00	54.45	283.08	42.77	73.30	21.71	62.22	483.08

a) Representative of transportation unit costs only; does not include a unit cost of conservation. The Delta Water Rate should be added to these values in order to approximate unit costs at canalside. Includes surplus water prior to May 1, 1973.

b) Hypothetical charges which, if assessed on all entitlement water delivered to date, all surplus water delivered prior to May 1, 1983, and all entitlement water now estimated to be delivered during the remainder of the Project repayment period (Table B-5B), would provide a sum at the end of the period financially equivalent to all Transportation Charges required under the water supply contract considering interest rate at the Project Interest Rate of 4.713 percent per annum.

c) The Water System Revenue Bond Surcharge equivalent unit rate is calculated by dividing the WSRB surcharge for 1992 (from 132-91, Table B-22) by the total Transportation Capital (132-91, B-15) and the Capital component of the Delta Water Charge (132-91, B-4 \* 10.93626962). This rate is multiplied by the equivalent rate for the Transportation Capital cost (column 1).

TABLE B-26

**Capital Costs of Each Aqueduct Reach to Be Reimbursed Through Capital Cost  
Component of East Branch Enlargement Transportation Charge**

(in dollars)

Sheet 1 of 2

Calendar Year	CALIFORNIA AQUEDUCT							
	MOJAVE DIVISION							
	Reach 18A	Reach 19	Reach 20A	Reach 20B	Reach 21	Reach 22A	Reach 22B	Reach 23B
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
1952	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	74,000
1981	9,000	0	0	0	0	0	0	385,000
1982	1,644,000	0	0	0	0	0	0	1,586,000
1983	2,486,000	0	0	0	0	0	0	2,965,000
1984	809,000	0	0	0	0	0	796,000	1,380,000
1985	95,000	435,000	75,000	544,000	860,000	704,000	969,000	146,000
1986	784,000	4,477,000	3,143,000	2,234,000	1,569,000	1,203,000	1,803,000	34,000
1987	11,000	951,000	1,076,000	667,000	399,000	47,000	16,400,000	43,000
1988	1,000	123,000	1,680,000	1,729,000	2,024,000	39,000	13,323,000	70,000
1989	0	206,000	2,089,000	2,174,000	2,510,000	61,000	11,238,000	229,000
1990	1,000	577,000	903,000	735,000	928,000	194,000	21,211,000	887,000
1991	0	379,000	504,000	389,000	503,000	127,000	31,641,000	3,331,000
1992	0	25,000	21,000	24,000	17,000	6,000	4,729,000	16,468,000
1993	0	1,000	1,000	1,000	1,000	0	53,000	3,305,000
1994	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0
TOTAL	5,840,000	7,174,000	9,492,000	8,497,000	8,811,000	2,381,000	102,163,000	30,903,000

TABLE B-26

**Capital Costs of Each Aqueduct Reach to Be Reimbursed Through Capital Cost  
Component of East Branch Enlargement Transportation Charge (Continued)**

(in dollars)

Sheet 2 of 2

Calendar Year	CALIFORNIA AQUEDUCT							GRAND TOTAL
	MOJAVE DIVISION (continued)			SANTA ANA DIVISION				
	Reach 23C	Reach 24	Total	Reach 25	Reach 26A	Reach 26B	Total	
	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
1952	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	74,000	0	0	0	0	74,000
1981	0	0	394,000	0	0	0	0	394,000
1982	0	0	3,230,000	0	0	0	0	3,230,000
1983	0	0	5,451,000	0	0	0	0	5,451,000
1984	0	0	2,985,000	0	0	50,000	50,000	3,035,000
1985	0	0	3,828,000	0	617,000	39,000	656,000	4,484,000
1986	25,000	0	15,272,000	0	1,926,000	154,000	2,080,000	17,352,000
1987	178,000	0	19,772,000	0	3,699,000	437,000	4,136,000	23,908,000
1988	632,000	0	19,621,000	0	5,736,000	3,329,000	9,065,000	28,686,000
1989	1,130,000	0	19,637,000	0	41,463,000	1,650,000	43,113,000	62,750,000
1990	2,066,000	0	27,502,000	0	31,341,000	1,650,000	32,991,000	60,493,000
1991	11,495,000	0	48,369,000	0	37,931,000	999,000	38,930,000	87,299,000
1992	19,502,000	0	40,792,000	0	22,702,000	299,000	23,001,000	63,793,000
1993	9,430,000	0	12,792,000	0	32,046,000	0	32,046,000	44,838,000
1994	4,661,000	0	4,661,000	0	9,265,000	0	9,265,000	13,926,000
1995	782,000	0	782,000	0	0	0	0	782,000
1996	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0
TOTAL	49,901,000	0	225,162,000	0	186,726,000	8,607,000	195,333,000	420,495,000

TABLE B-27

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed Through Minimum OMP&R Component of East Branch Enlargement Transportation Charge <sup>a</sup>**

(in dollars)

Sheet 1 of 2

Calendar Year	CALIFORNIA AQUEDUCT							
	MOJAVE DIVISION							
	Reach 18A	Reach 19	Reach 20A	Reach 20B	Reach 21	Reach 22A	Reach 22B	Reach 23B
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	37,094	0
1992	0	0	0	0	0	0	155,472	0
1993	0	0	0	0	0	0	57,164	0
1994	0	0	0	0	0	0	58,576	0
1995	0	0	0	0	0	0	58,576	0
1996	0	0	0	0	0	0	58,576	0
1997	0	0	0	0	0	0	58,576	0
1998	0	0	0	0	0	0	58,576	0
1999	0	0	0	0	0	0	58,576	0
2000	0	0	0	0	0	0	58,576	0
2001	0	0	0	0	0	0	58,576	0
2002	0	0	0	0	0	0	58,576	0
2003	0	0	0	0	0	0	58,576	0
2004	0	0	0	0	0	0	58,576	0
2005	0	0	0	0	0	0	58,576	0
2006	0	0	0	0	0	0	58,576	0
2007	0	0	0	0	0	0	58,576	0
2008	0	0	0	0	0	0	58,576	0
2009	0	0	0	0	0	0	58,576	0
2010	0	0	0	0	0	0	58,576	0
2011	0	0	0	0	0	0	58,576	0
2012	0	0	0	0	0	0	58,576	0
2013	0	0	0	0	0	0	58,576	0
2014	0	0	0	0	0	0	58,576	0
2015	0	0	0	0	0	0	58,576	0
2016	0	0	0	0	0	0	58,576	0
2017	0	0	0	0	0	0	58,576	0
2018	0	0	0	0	0	0	58,576	0
2019	0	0	0	0	0	0	58,576	0
2020	0	0	0	0	0	0	58,576	0
2021	0	0	0	0	0	0	58,576	0
2022	0	0	0	0	0	0	58,576	0
2023	0	0	0	0	0	0	58,576	0
2024	0	0	0	0	0	0	58,576	0
2025	0	0	0	0	0	0	58,576	0
2026	0	0	0	0	0	0	58,576	0
2027	0	0	0	0	0	0	58,576	0
2028	0	0	0	0	0	0	58,576	0
2029	0	0	0	0	0	0	58,576	0
2030	0	0	0	0	0	0	58,576	0
2031	0	0	0	0	0	0	58,576	0
2032	0	0	0	0	0	0	58,576	0
2033	0	0	0	0	0	0	58,576	0
2034	0	0	0	0	0	0	58,576	0
2035	0	0	0	0	0	0	58,576	0
TOTAL	0	0	0	0	0	0	2,709,922	0

a) Presently, this table shows only the estimated incremental minimum OMP&R costs attributable to East Branch Enlargement.

Under Article 49(e)(1), the contractors participating in the East Branch Enlargement will also share in the remaining minimum OMP&R costs of the affected reaches according to a formula to be developed by DWR in consultation with the affected contractors. Once the formula is developed, subsequent versions of this table will reflect the transfer of a share of the minimum OMP&R costs presently shown in Table B-11.



TABLE B-27

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed Through Minimum  
OMP&R Component of East Branch Enlargement Transportation Charge (Continued)**

(in dollars)

Sheet 2 of 2

Calendar Year	CALIFORNIA AQUEDUCT (continued)							TOTAL
	MOJAVE DIVISION (continued)			SANTA ANA DIVISION				
	Reach 23C	Reach 24	Subtotal	Reach 25	Reach 26A	Reach 26B	Subtotal	
	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0
1991	0	0	37,094	0	35,250	0	35,250	72,344
1992	0	0	155,472	0	275,330	0	275,330	430,802
1993	5,649	0	62,813	0	119,073	0	119,073	181,886
1994	167,856	0	226,432	0	168,319	0	168,319	394,751
1995	125,517	0	184,093	0	122,014	0	122,014	306,107
1996	125,517	0	184,093	0	122,014	0	122,014	306,107
1997	125,517	0	184,093	0	122,014	0	122,014	306,107
1998	125,517	0	184,093	0	122,014	0	122,014	306,107
1999	125,517	0	184,093	0	122,014	0	122,014	306,107
2000	125,517	0	184,093	0	122,014	0	122,014	306,107
2001	125,517	0	184,093	0	122,014	0	122,014	306,107
2002	125,517	0	184,093	0	122,014	0	122,014	306,107
2003	125,517	0	184,093	0	122,014	0	122,014	306,107
2004	125,517	0	184,093	0	122,014	0	122,014	306,107
2005	125,517	0	184,093	0	122,014	0	122,014	306,107
2006	125,517	0	184,093	0	122,014	0	122,014	306,107
2007	125,517	0	184,093	0	122,014	0	122,014	306,107
2008	125,517	0	184,093	0	122,014	0	122,014	306,107
2009	125,517	0	184,093	0	122,014	0	122,014	306,107
2010	125,517	0	184,093	0	122,014	0	122,014	306,107
2011	125,517	0	184,093	0	122,014	0	122,014	306,107
2012	125,517	0	184,093	0	122,014	0	122,014	306,107
2013	125,517	0	184,093	0	122,014	0	122,014	306,107
2014	125,517	0	184,093	0	122,014	0	122,014	306,107
2015	125,517	0	184,093	0	122,014	0	122,014	306,107
2016	125,517	0	184,093	0	122,014	0	122,014	306,107
2017	125,517	0	184,093	0	122,014	0	122,014	306,107
2018	125,517	0	184,093	0	122,014	0	122,014	306,107
2019	125,517	0	184,093	0	122,014	0	122,014	306,107
2020	125,517	0	184,093	0	122,014	0	122,014	306,107
2021	125,517	0	184,093	0	122,014	0	122,014	306,107
2022	125,517	0	184,093	0	122,014	0	122,014	306,107
2023	125,517	0	184,093	0	122,014	0	122,014	306,107
2024	125,517	0	184,093	0	122,014	0	122,014	306,107
2025	125,517	0	184,093	0	122,014	0	122,014	306,107
2026	125,517	0	184,093	0	122,014	0	122,014	306,107
2027	125,517	0	184,093	0	122,014	0	122,014	306,107
2028	125,517	0	184,093	0	122,014	0	122,014	306,107
2029	125,517	0	184,093	0	122,014	0	122,014	306,107
2030	125,517	0	184,093	0	122,014	0	122,014	306,107
2031	125,517	0	184,093	0	122,014	0	122,014	306,107
2032	125,517	0	184,093	0	122,014	0	122,014	306,107
2033	125,517	0	184,093	0	122,014	0	122,014	306,107
2034	125,517	0	184,093	0	122,014	0	122,014	306,107
2035	125,517	0	184,093	0	122,014	0	122,014	306,107
TOTAL	5,319,702	0	8,029,624	0	5,600,546	0	5,600,546	13,630,170

TABLE B-28

## Capital Costs of East Branch Enlargement Transportation Facilities Allocated to Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA							Total
	Antelope Valley- East Kern Water Agency	Coachella Valley Water District	Desert Water Agency	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	The Metropolitan Water District of Southern California	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	8,188	2,981	9,434	0	0	53,397	74,000
1981	0	43,500	15,589	49,893	36	0	284,982	394,000
1982	0	340,317	78,089	350,646	6,550	0	2,454,399	3,230,001
1983	0	577,318	140,915	602,479	9,904	0	4,120,384	5,451,000
1984	0	313,933	69,480	321,151	3,223	0	2,327,212	3,034,999
1985	49,720	458,724	70,598	347,529	4,522	25,257	3,527,650	4,484,000
1986	185,330	1,757,032	236,272	1,363,044	41,896	78,842	13,689,582	17,351,998
1987	49,757	2,453,263	378,362	1,772,632	10,619	151,421	19,091,946	23,908,000
1988	124,466	2,697,815	504,118	1,711,713	13,767	234,807	23,399,313	28,685,999
1989	155,446	7,190,929	2,454,461	1,670,725	17,419	1,697,316	49,563,705	62,750,001
1990	62,786	6,754,553	2,033,528	2,332,372	8,680	1,282,965	48,018,116	60,493,000
1991	34,647	9,955,675	3,001,008	3,462,276	4,987	1,552,731	69,287,677	87,299,001
1992	1,546	7,627,308	2,830,098	2,536,378	275	929,322	49,868,074	63,793,001
1993	68	5,585,980	2,297,355	426,484	12	1,311,824	35,216,277	44,838,000
1994	0	1,752,945	714,894	0	0	379,269	11,078,892	13,926,000
1995	0	99,165	36,109	0	0	0	646,726	782,000
1996	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0
TOTAL	663,766	47,616,645	14,863,857	16,956,756	121,890	7,643,754	332,628,332	420,495,000

TABLE B-29  
Capital Cost Component of East Branch Enlargement Facilities  
Transportation Charge for Each Contractor

Calendar Year	SOUTHERN CALIFORNIA AREA (in dollars)							Total
	Antelope Valley - East Kern Water Agency	Coachella Valley Water District	Desert Water Agency	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District (a)	The Metropolitan Water District of Southern California	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0
1988	21,396	1,534,894	479,128	546,591	3,929	0	10,722,075	13,308,013
1989	22,470	1,611,963	503,185	574,036	4,126	0	11,260,445	13,976,226
1990	22,473	1,612,177	503,252	574,112	4,127	0	11,261,939	13,978,080
1991	22,475	1,612,278	503,284	574,148	4,127	0	11,262,644	13,978,955
1992	47,341	3,396,103	1,060,117	1,209,386	8,693	0	23,723,642	29,445,282
1993	47,394	3,399,878	1,061,295	1,210,730	8,703	0	23,750,009	29,478,008
1994	47,432	3,402,648	1,062,160	1,211,716	8,710	0	23,769,358	29,502,024
1995	47,485	3,406,439	1,063,343	1,213,066	8,720	0	23,795,839	29,534,892
1996	47,535	3,410,035	1,064,466	1,214,347	8,729	0	23,820,962	29,566,074
1997	47,593	3,414,186	1,065,781	1,215,825	8,740	0	23,849,957	29,602,062
1998	47,637	3,417,318	1,066,740	1,216,941	8,748	0	23,871,844	29,629,228
1999	47,693	3,421,343	1,067,995	1,218,374	8,758	0	23,899,951	29,664,113
2000	47,742	3,424,894	1,069,104	1,219,638	8,767	0	23,924,760	29,694,906
2001	47,809	3,429,651	1,070,589	1,221,332	8,779	0	23,957,988	29,736,148
2002	47,859	3,433,242	1,071,710	1,222,611	8,788	0	23,983,075	29,767,285
2003	47,911	3,436,974	1,072,875	1,223,940	8,798	0	24,009,149	29,799,647
2004	47,973	3,441,428	1,074,265	1,225,526	8,809	0	24,040,258	29,838,260
2005	48,025	3,445,150	1,075,428	1,226,852	8,819	0	24,066,259	29,870,531
2006	48,084	3,449,393	1,076,751	1,228,363	8,830	0	24,095,898	29,907,319
2007	48,138	3,453,259	1,077,959	1,229,740	8,840	0	24,122,911	29,940,847
2008	48,186	3,456,719	1,079,038	1,230,972	8,849	0	24,147,077	29,970,841
2009	48,252	3,461,449	1,080,516	1,232,656	8,861	0	24,180,115	30,011,847
2010	48,316	3,466,034	1,081,946	1,234,289	8,872	0	24,212,154	30,051,613
2011	48,375	3,470,252	1,083,263	1,235,791	8,883	0	24,241,617	30,088,182
2012	48,443	3,475,150	1,084,792	1,237,535	8,896	0	24,275,827	30,130,643
2013	48,502	3,479,409	1,086,121	1,239,052	8,907	0	24,305,574	30,167,564
2014	48,577	3,484,743	1,087,786	1,240,951	8,920	0	24,342,835	30,213,812
2015	48,646	3,489,729	1,089,343	1,242,727	8,933	0	24,377,667	30,257,044
2016	48,724	3,495,349	1,091,097	1,244,728	8,947	0	24,416,925	30,305,770
2017	48,808	3,501,367	1,092,976	1,246,871	8,963	0	24,458,967	30,357,952
2018	48,914	3,508,918	1,095,333	1,249,560	8,982	0	24,511,719	30,423,427
2019	49,026	3,516,953	1,097,841	1,252,421	9,003	0	24,567,840	30,493,083
2020	49,153	3,526,107	1,100,699	1,255,681	9,026	0	24,631,789	30,572,455
2021	49,218	3,530,764	1,102,152	1,257,340	9,038	0	24,664,321	30,612,833
2022	49,301	3,536,692	1,104,003	1,259,451	9,053	0	24,705,730	30,664,229
2023	27,841	1,997,230	623,449	711,233	5,113	0	13,951,744	17,318,609
2024	28,999	2,080,274	649,372	740,606	5,325	0	14,531,850	18,036,625
2025	26,860	1,926,886	601,490	686,183	4,932	0	13,460,353	16,706,705
2026	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0
TOTAL	1,666,606	119,557,278	37,320,624	42,575,521	306,043	0	835,173,067	1,036,599,134

a) Under Article 49(d)(4)(A) of its contract, San Bernardino Valley Municipal Water District elected to pay a portion of its allocated costs of East Branch Enlargement in advance rather than to participate in payment of Series A Water System Revenue Bonds. This election made via a letter of agreement signed June 1, 1987, calls for payment of \$1,479,000 on January 1, 1988, \$463,000 on July 1, 1988, and \$231,000 on January 1, 1989. San Bernardino Valley Municipal Water District will consider similar advance payments in lieu of participating in subsequent revenue bond financing of remaining East Branch Enlargement costs.

TABLE B-30  
Minimum OMP&R Component of East Branch Enlargement  
Facilities Transportation Charge for Each Contractor

Calendar Year	(in dollars) SOUTHERN CALIFORNIA AREA							Total
	Antelope Valley- East Kern Water Agency	Coachella Valley Water District	Desert Water Agency	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	The Metropolitan Water District of Southern California	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0
1991	0	8,155	2,223	3,363	0	1,443	57,181	72,345
1992	0	50,179	16,196	14,096	0	11,271	339,060	430,802
1993	0	21,403	7,178	5,183	0	4,874	143,247	181,885
1994	0	48,291	17,336	5,311	0	6,890	316,923	394,751
1995	0	37,115	12,884	5,311	0	4,995	245,803	306,107
1996	0	37,115	12,884	5,311	0	4,995	245,803	306,107
1997	0	37,115	12,884	5,311	0	4,995	245,803	306,107
1998	0	37,115	12,884	5,311	0	4,995	245,803	306,107
1999	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2000	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2001	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2002	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2003	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2004	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2005	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2006	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2007	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2008	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2009	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2010	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2011	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2012	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2013	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2014	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2015	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2016	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2017	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2018	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2019	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2020	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2021	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2022	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2023	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2024	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2025	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2026	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2027	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2028	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2029	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2030	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2031	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2032	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2033	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2034	0	37,115	12,884	5,311	0	4,995	245,803	306,107
2035	0	37,115	12,884	5,311	0	4,995	245,803	306,107
TOTAL	0	1,649,743	571,177	245,704	0	229,273	10,934,314	13,630,170

TABLE B-31

## Total East Branch Enlargement Facilities Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA							Total
	Antelope Valley- East Kern Water Agency	Coachella Valley Water District	Desert Water Agency	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	The Metropolitan Water District of Southern California	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0
1988	21,396	1,534,894	479,128	546,591	3,929	0	10,722,074	13,308,012
1989	22,470	1,611,963	503,185	574,036	4,126	0	11,260,445	13,976,225
1990	22,473	1,612,177	503,252	574,112	4,127	0	11,261,939	13,978,080
1991	22,475	1,620,433	505,507	577,511	4,127	1,443	11,319,805	14,051,301
1992	47,341	3,446,282	1,076,313	1,223,482	8,693	11,271	24,062,703	29,876,085
1993	47,394	3,421,281	1,068,473	1,215,913	8,703	4,874	23,893,256	29,659,894
1994	47,432	3,450,939	1,079,496	1,217,027	8,710	6,890	24,086,281	29,896,775
1995	47,485	3,443,554	1,076,227	1,218,377	8,720	4,995	24,041,641	29,840,999
1996	47,535	3,447,150	1,077,350	1,219,658	8,729	4,995	24,066,764	29,872,181
1997	47,593	3,451,301	1,078,645	1,221,136	8,740	4,995	24,095,760	29,908,170
1998	47,637	3,454,433	1,079,624	1,222,252	8,748	4,995	24,117,648	29,935,337
1999	47,693	3,458,458	1,080,879	1,223,685	8,758	4,995	24,145,753	29,970,221
2000	47,742	3,462,009	1,081,988	1,224,949	8,767	4,995	24,170,563	30,001,013
2001	47,809	3,466,766	1,083,473	1,226,643	8,779	4,995	24,203,791	30,042,256
2002	47,859	3,470,357	1,084,594	1,227,922	8,788	4,995	24,228,876	30,073,393
2003	47,911	3,474,089	1,085,759	1,229,251	8,798	4,995	24,254,952	30,105,755
2004	47,973	3,478,543	1,087,149	1,230,837	8,809	4,995	24,286,060	30,144,366
2005	48,025	3,482,265	1,088,312	1,232,163	8,819	4,995	24,312,062	30,176,641
2006	48,084	3,486,508	1,089,635	1,233,674	8,830	4,995	24,341,702	30,213,428
2007	48,138	3,490,374	1,090,843	1,235,051	8,840	4,995	24,368,715	30,246,956
2008	48,186	3,493,834	1,091,922	1,236,283	8,849	4,995	24,392,881	30,276,950
2009	48,252	3,498,564	1,093,400	1,237,967	8,861	4,995	24,425,918	30,317,957
2010	48,316	3,503,149	1,094,830	1,239,600	8,872	4,995	24,457,957	30,357,719
2011	48,375	3,507,367	1,096,147	1,241,102	8,883	4,995	24,487,420	30,394,289
2012	48,443	3,512,265	1,097,676	1,242,846	8,896	4,995	24,521,630	30,436,751
2013	48,502	3,516,524	1,099,005	1,244,363	8,907	4,995	24,551,377	30,473,673
2014	48,577	3,521,858	1,100,670	1,246,262	8,920	4,995	24,588,638	30,519,920
2015	48,646	3,526,844	1,102,227	1,248,038	8,933	4,995	24,623,470	30,563,153
2016	48,724	3,532,464	1,103,981	1,250,039	8,947	4,995	24,662,728	30,611,878
2017	48,808	3,538,482	1,105,860	1,252,182	8,963	4,995	24,704,770	30,664,060
2018	48,914	3,546,033	1,108,217	1,254,871	8,982	4,995	24,757,523	30,729,535
2019	49,026	3,554,068	1,110,725	1,257,732	9,003	4,995	24,813,643	30,799,192
2020	49,153	3,563,222	1,113,583	1,260,992	9,026	4,995	24,877,592	30,878,563
2021	49,218	3,567,879	1,115,036	1,262,651	9,038	4,995	24,910,124	30,918,941
2022	49,301	3,573,807	1,116,867	1,264,762	9,053	4,995	24,951,533	30,970,338
2023	27,841	2,034,345	636,333	716,544	5,113	4,995	14,197,547	17,622,718
2024	28,999	2,117,389	662,256	746,117	5,325	4,995	14,777,653	18,342,734
2025	26,860	1,964,001	614,374	691,494	4,932	4,995	13,706,156	17,012,812
2026	0	37,115	12,884	5,311	0	4,995	245,803	306,108
2027	0	37,115	12,884	5,311	0	4,995	245,803	306,108
2028	0	37,115	12,884	5,311	0	4,995	245,803	306,108
2029	0	37,115	12,884	5,311	0	4,995	245,803	306,108
2030	0	37,115	12,884	5,311	0	4,995	245,803	306,108
2031	0	37,115	12,884	5,311	0	4,995	245,803	306,108
2032	0	37,115	12,884	5,311	0	4,995	245,803	306,108
2033	0	37,115	12,884	5,311	0	4,995	245,803	306,108
2034	0	37,115	12,884	5,311	0	4,995	245,803	306,108
2035	0	37,115	12,884	5,311	0	4,995	245,803	306,108
TOTAL	1,666,606	121,207,021	37,891,801	42,821,225	306,043	229,273	846,107,382	1,050,229,351

TABLE B-32  
Annual Surplus and Unscheduled Water Deliveries

Calendar Year(a)	SOUTH BAY AREA				SAN JOAQUIN VALLEY AREA		
	ACFC & WCD, ZONE 7	ACWD	SCWWD	Area Total	DDWD	DRWD	EWSID
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
1973	0	0	2,499	2,499	4,104	13,192	2,814
1974	0	0	2,934	2,934	4,128	33,391	1,539
1975	0	0	18,470	18,470	7,495	40,555	3,448
1976	3,636	4,147	24,705	32,488	5,727	30,922	3,457
1977	0	0	0	0	0	0	0
1978	0	0	0	0	0	7,586	0
1979	0	0	15,998	15,998	0	38,545	0
1980(b)	0	0	14,278	14,278	6,092	39,079	0
1981(b)	0	0	18,920	18,920	10,647	32,327	2,992
1982(b)	0	0	1,303	1,303	6,359	14,463	926
1983	0	0	0	0	0	13,019	0
1984	0	0	3,663	3,663	7,419	19,500	0
1985	0	0	9,638	9,638	6,095	7,636	0
1986(c)	0	0	2,595	2,595	3,970	903	1,130
1987(d)	0	0	6,949	6,949	2,573	0	1,876
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0
TOTAL	3,636	4,147	121,952	129,735	64,609	291,118	18,182

Calendar Year(a)	SAN JOAQUIN VALLEY AREA (continued)					SOUTHERN CALIFORNIA AREA	TOTAL ALL AREAS
	HWD(e)	KCWA	OFWD	TLBWSD	Area Total	LCID	[14]
	[8]	[9]	[10]	[11]	[12]	[13]	
1973	5,600	163,744	1,013	63,988	254,455	80	257,034
1974	1,972	299,433	3,471	68,989	412,923	67	415,924
1975	3,759	410,820	3,576	132,206	601,859	356	620,685
1976	3,720	442,150	3,840	57,806	547,622	0	580,110
1977	0	0	0	0	0	0	0
1978	0	8,623	6	0	16,215	0	16,215
1979	1,000	524,247	698	66,342	630,832	0	646,830
1980(b)	0	327,233	718	14,617	387,939	0	402,217
1981(b)	-	624,581	2,788	215,926	889,261	247	908,428
1982(b)	-	124,736	721	67,365	214,570	0	215,873
1983	-	0	0	0	13,019	0	13,019
1984	-	230,691	1,644	0	259,254	0	262,917
1985	-	186,486	764	96,887	297,868	0	307,506
1986(c)	-	14,987	247	12,788	34,025	0	36,620
1987(d)	-	52,048	255	51,206	107,958	0	114,907
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990	0	0	90	0	90	0	90
TOTAL	16,051	3,409,779	19,831	848,320	4,667,890	750	4,798,375

- a) All deliveries are surplus water deliveries unless otherwise indicated.  
b) Includes surplus and unscheduled water.  
c) Includes 12,270 acre-feet of 1985 surplus water carried over and delivered during January and February 1986. Also includes 22,034 acre-feet of unscheduled water.  
d) Unscheduled water only.  
e) District merged with Tulare Lake Basin Water Storage District effective January 1, 1981.

TABLE B-33  
Power Costs for Pumping Surplus Water

(in dollars)

Calendar Year	SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT							Combined Total
	Reach 1	Reach 1	Reach 4	Reach 14A	Reach 15A	Reach 16A	Reach 17E	Reach 31A	
	South Bay and Del Valle Pumping Plants	Banks Pumping Plant	Dos Amigos Pumping Plant	Buena Vista Pumping Plant	Wheeler Ridge Pumping Plant	Chrisman Pumping Plant	Edmonston Pumping Plant	Las Perillas and Badger Hill Pumping Plants	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
1973(a)									
Capacity	5,290	0	37,033	25,622	29,816	0	0	15,588	113,349
Energy	6,302	231,691	102,725	53,375	12,819	1,697	526	24,245	433,380
Total	11,592	231,691	139,758	78,997	42,635	1,697	526	39,833	546,729
1974									
Capacity	21,773	0	81,328	69,381	62,301	0	0	31,511	266,294
Energy	7,561	374,506	181,827	95,596	22,550	5,599	450	33,406	721,495
Total	29,334	374,506	263,155	164,977	84,851	5,599	450	64,917	987,789
1975									
Capacity	32,288	298,709	126,806	99,876	30,049	0	0	32,231	619,759
Energy	47,597	617,396	264,000	99,745	313	661	2,391	49,501	1,081,604
Total	79,885	916,105	390,806	199,421	30,362	661	2,391	81,732	1,701,363
1976									
Capacity	41,897	60,502	63,788	85,415	8,579	0	0	30,449	290,630
Energy	83,722	597,636	225,126	103,213	4,885	5,385	0	45,101	1,065,068
Total	125,619	658,138	288,914	188,628	13,464	5,385	0	75,550	1,355,698
1977									
Capacity	0	0	0	0	0	0	0	0	0
Energy	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
1978									
Capacity	0	144,188	51,403	0	0	0	0	0	195,591
Energy	0	15,039	6,591	0	0	0	0	0	21,630
Total	0	159,227	57,994	0	0	0	0	0	217,221
1979									
Capacity	27,116	382,070	232,001	35,743	6,771	3,165	0	8,769	695,635
Energy	39,517	599,886	256,188	51,045	8,205	4,194	0	11,808	970,843
Total	66,633	981,956	488,189	86,788	14,976	7,359	0	20,577	1,666,478
1980									
Capacity	30,319	530,982	227,837	28,682	3,559	5,146	0	3,228	829,753
Energy	35,268	373,023	162,404	73,422	11,451	9,753	0	22,755	688,076
Total	65,587	904,005	390,241	102,104	15,010	14,899	0	25,983	1,517,829
1981									
Capacity	36,749	625,106	281,362	69,202	22,262	24,138	1,054	26,168	1,086,041
Energy	44,229	806,574	366,945	85,341	27,489	29,847	1,629	34,020	1,396,074
Total	80,978	1,431,680	648,307	154,543	49,751	53,985	2,683	60,188	2,482,115
1982									
Capacity	40,355	1,704,800	578,744	176,362	16,932	2,612	0	6,148	2,525,953
Energy	3,225	192,415	88,494	19,390	2,109	296	0	5,278	311,207
Total	43,580	1,897,215	667,238	195,752	19,041	2,908	0	11,426	2,837,160
1983									
Capacity	0	40,303	16,941	0	0	0	0	0	57,244
Energy	0	43,045	20,026	0	0	0	0	0	63,071
Total	0	83,348	36,967	0	0	0	0	0	120,315
1984									
Capacity	0	0	0	0	0	0	0	0	0
Energy	51,632	1,865,605	769,718	0	0	0	0	37,407	2,724,362
Total	51,632	1,865,605	769,718	0	0	0	0	37,407	2,724,362
1985									
Capacity	0	0	0	0	0	0	0	0	0
Energy	301,663	2,835,778	1,180,255	0	0	0	0	46,140	4,363,836
Total	301,663	2,835,778	1,180,255	0	0	0	0	46,140	4,363,836
1986									
Capacity	0	0	0	0	0	0	0	0	0
Energy	43,007	227,832	99,593	0	0	0	0	20,176	390,608
Total	43,007	227,832	99,593	0	0	0	0	20,176	390,608
1987									
Capacity	0	0	0	0	0	0	0	0	0
Energy	98,970	610,046	273,559	59,496	15,365	6,776	0	12,700	1,076,912
Total	98,970	610,046	273,559	59,496	15,365	6,776	0	12,700	1,076,912
1988									
Capacity	0	0	0	0	0	0	0	0	0
Energy	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
1989									
Capacity	0	0	0	0	0	0	0	0	0
Energy	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
1990									
Capacity	0	0	0	0	0	0	0	0	0
Energy	0	834	0	0	0	0	0	0	834
Total	0	834	0	0	0	0	0	0	834
GRAND TOTAL	998,480	13,177,966	5,694,694	1,230,703	285,455	99,269	6,050	496,629	21,989,249

a) May through December only.

TABLE B-34  
Power, Replacement, and Administrative Charges for Surplus Water Delivery

(in dollars)

Calendar Year	SOUTH BAY AREA		SAN JOAQUIN VALLEY AREA						SOUTHERN CALIFORNIA AREA				Total
	ACWD	SCVWD	DDWD	DRWD	EWSID	KCWA(a)	OFWD	TLBWS	AVEK	LCID	CVWD	DWA	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
1978													
Capacity	0	3,275	0	14,642	0	154,051	4	23,619	0	0	0	0	195,591
Energy	0	0	0	10,119	0	11,505	6	0	0	0	0	0	21,630
Replacement	0	0	0	248	0	281	0	0	0	0	0	0	529
Administrative	0	0	0	3,793	0	4,312	3	0	0	0	0	0	8,108
Total	0	3,275	0	28,802	0	170,149	13	23,619	0	0	0	0	225,858
1979													
Capacity	0	37,413	0	37,615	0	547,875	417	72,315	0	0	0	0	695,635
Energy	0	54,354	0	51,418	0	774,587	651	89,833	0	0	0	0	970,843
Replacement	0	413	0	886	0	7,633	5	2,042	0	0	0	0	10,979
Administrative	0	4,005	0	20,051	0	116,977	176	46,075	0	0	0	0	187,284
Total	0	96,185	0	109,970	0	1,447,072	1,249	210,265	0	0	0	0	1,864,741
1980													
Capacity	0	41,641	8,485	40,160	0	636,135	432	102,900	0	0	0	0	829,753
Energy	0	48,510	13,101	52,131	0	553,902	666	19,766	0	0	0	0	688,078
Replacement	0	533	3,332	1,255	0	149,588	134	5,705	0	0	0	0	160,547
Administrative	0	5,638	3,815	21,859	0	281,776	666	22,258	0	0	0	0	336,012
Total	0	96,322	28,733	115,405	0	1,621,401	1,898	150,629	0	0	0	0	2,014,388
1981													
Capacity	0	50,706	14,608	40,674	2,520	784,875	1,601	189,238	0	1,819	0	0	1,086,041
Energy	0	61,028	22,575	42,078	3,897	980,142	2,475	281,071	0	2,808	0	0	1,396,074
Replacement	0	3,538	4,099	12,446	1,152	275,232	521	83,132	0	431	0	0	380,551
Administrative	725	11,192	6,160	19,221	1,869	348,397	1,950	146,357	0	123	0	0	535,994
Total	725	126,464	47,442	114,419	9,438	2,388,646	6,547	699,798	0	5,181	0	0	3,398,660
1982													
Capacity	0	55,431	20,739	74,514	6,103	1,658,571	434	339,639	370,522	0	0	0	2,525,953
Energy	0	4,386	13,578	18,876	1,208	184,594	643	87,922	0	0	0	0	311,207
Replacement	0	105	2,462	5,596	361	54,018	135	26,070	0	0	0	0	88,747
Administrative	0	7,328	3,710	5,487	698	185,494	676	50,524	0	0	0	0	253,917
Total	0	67,250	40,489	104,473	8,370	2,082,677	1,888	504,155	370,522	0	0	0	3,179,824
1983													
Capacity	0	1,698	187	3,850	60	48,348	0	3,101	0	0	0	0	57,244
Energy	0	0	0	62,996	0	0	75	0	0	0	0	0	63,071
Replacement	0	0	0	5,851	0	0	6	0	0	0	0	0	5,857
Administrative	0	0	0	6,510	0	0	14	0	0	0	0	0	6,524
Total	0	1,698	187	79,207	60	48,348	95	3,101	0	0	0	0	132,696
1984													
Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	70,885	98,169	222,456	0	2,322,714	10,138	0	0	0	0	0	2,724,362
Replacement	0	782	3,334	8,763	0	103,670	351	0	0	0	0	0	116,900
Administrative	2,450	7,160	6,800	9,380	0	36,460	6,340	0	0	0	0	0	68,590
Total	2,450	78,827	108,303	240,599	0	2,462,844	16,829	0	0	0	0	0	2,909,852
1985													
Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	414,281	124,603	107,436	0	2,444,591	6,373	1,266,552	0	0	0	0	4,363,836
Replacement	0	2,053	2,737	3,429	0	83,732	163	43,502	0	0	0	0	135,616
Administrative	0	4,811	4,596	5,227	0	18,251	4,245	11,883	0	0	0	0	49,013
Total	0	421,145	131,936	116,092	0	2,546,574	10,781	1,321,937	0	0	0	0	4,548,465
1986													
Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	58,939	52,904	7,658	12,104	113,630	1,267	144,106	0	0	0	0	390,608
Replacement	0	553	1,783	405	507	6,729	53	5,742	0	0	0	0	15,772
Administrative	2263	3468	6051	3995	1550	7533	3545	5470	0	0	0	0	33,875
Total	2,263	62,960	60,738	12,058	14,161	127,892	4,865	155,318	0	0	0	0	440,255
1987													
Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	135,461	32,558	0	14,941	500,919	1,367	391,686	0	0	0	0	1,076,912
Replacement	0	1,974	1,508	0	1,099	37,897	72	30,007	0	0	0	0	72,557
Administrative	0	1392	1240	711	1298	4135	1252	2789	0	0	0	0	12,797
Total	0	138,827	35,306	711	17,338	542,951	2,691	424,442	0	0	0	0	1,162,266
1988													
Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	0	0	0	0	0	0	0	0	0	0	0	0
Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0
Administrative	0	839	838	839	838	839	838	839	0	0	839	839	7,548
Total	0	839	838	839	838	839	838	839	0	0	839	839	7,548
1989													
Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	0	0	0	0	0	0	0	0	0	0	0	0
Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0
Administrative	0	490	490	490	490	490	490	490	0	0	490	490	4,410
Total	0	490	490	490	490	490	490	490	0	0	490	490	4,410
1990													
Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	0	0	0	0	0	834	0	0	0	0	0	834
Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0
Administrative	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	834	0	0	0	0	0	834
GRAND TOTAL	5,438	1,094,282	454,462	923,065	50,695	13,439,883	49,018	3,494,593	370,522	5,181	1,329	1,329	19,889,797

a) 1982 costs are preliminary and may change when 1982 exchange is taken into consideration.





